The Cavendish Lecture

ON

INFLAMMATION OF THE VERMIFORM APPENDIX.

Delivered before the West London Medico-Chirurgical Society at the Town Hall, Hammersmith, on June 20th, 1902,

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MR. CHAIRMAN AND GENTLEMEN,—The subject is the not perfectly novel one of appendicitis, the reason being that there are certain points in connexion with this trouble which I think are still open to discussion. I should imagine that there has scarcely been anything more remarkable in the way of medicine at the close of the nineteenth century than the sudden appearance of the disease now known as appendicitis. If we remember that this is proportionally the very commonest acute malady met with in the abdomen excepting possibly the complications of hernia it is really astounding that 20 years ago this affection was absolutely unknown. It was not until the year 1886 that the very name itself had any existence. It was, as a matter of fact, by Fritz in 1866 that the name was first used, and it is particularly curious that he used it in a sense totally apart from the sense in which it is used at the present day. One knows that the academical-minded have a great objection to this uncouth term "appendicitis"; it lacks precision, but it has found its place in the clumsy nomenclature of medicine and has been accepted by the public with an extraordinary amount of generosity. Of course, I need not say that under no circumstances is appendicitis to be regarded as a new disease. It is probable that even the cave man with his rudimentary methods of eating suffered occasionally from appendicitis. The disease is not new but newly discovered; it has been hidden for centuries under a lot of vague clinical facts and medical verbiage. In old records we hear about appendicitis as gastric catarrh, gastric seizure, cramp of the bowels, iliac phlegmon, and many other terms. Moreover, a large number of examples of peritonitis were no doubt examples of appendicitis. In 1887 a certain elaborate treatise on peritonitis included no less than 26 entirely different forms of that particular affection. There are a few earlier reports of the trouble and in those earlier reports the appendix was blamed as being the cause of the disturbance. But all these earlier reports were like the voice of men crying in the wilderness; no sort of heed was paid to them although there were two authors who accused appendicitis of being the cause of what was then known as iliac phlegmon.

The point that should be first insisted upon in connexion with this malady is this: it is a pure peritonitis. There is no consideration about it which is apart from peritonitis. Until the peritoneum is involved there is no malady. An acute attack of appendicitis is an attack of peritonitis. It is very desirable, therefore, that in speaking of this affection we speak of a definite form of peritonitis, and the features and complications and possibilities of the malady and the treatment to a certain extent are simply those of peritonitis. No progress will be made, I think, until a proper estimate of this malady is realised and all terms about the twisting and turning of the appendix are thrown aside. Then it will be understood that the trouble is nothing but a form of peritonitis. That leads me to say one word about the disease originally in the appendix. Fritz used the term to describe a malady that had no symptoms; he described it to indicate those changes in the appendix which preceded the implication of the peritoneum and which clinically may have no kind of existence. In connexion with that point I should like to emphasise these three solitary facts. The first is this: that quite extensive changes may take place in the appendix without the production of a single solitary symptom. The appendix may be almost obliterated without the production of a single symptom of appendicitis, its mucous membrane can be entirely destroyed, and it can become stenosed or shrunken without the production of a single symptom. I am reminded of a case in which I was doing the ordinary operation of ovariotomy and I came across an appendix showing the grossest changes. In this case neither the patient nor the medical attendant had any suspicion of trouble in the appendix, for this woman never had any symptoms of appendicitis. The second fact is this. An attack of appendicitis, as we know it, may be preceded by a number of minor disturbances or minor seizures for which we have no name but which may be included under the title "appendicular colic." But this term is actually wrong. Colic, I imagine, means pain in the intestinal tube due to disorderly muscular action and there is no muscle in the appendix capable of producing the phenomenon of colic. A patient gets an attack of pain in the abdomen with a feeling of nausea and this lasts for perhaps two or three hours and then the whole thing is gone, but these troubles do not come under the head of appendicitis and probably do not concern the actual peritoneum. Thirdly, we must take a little more heed of a condition that should be called chronic appendicitis as seen in patients who have an abiding trouble in the right iliac fossa but never an attack of appendicitis. These attacks of chronic appendicitis are common enough. Some men and women are never free from some sense of discomfort in the abdomen—a gnawing pain, a burning pain, a griping pain, a feeling that there is something coming away there, a desire to support the back. People often walk across the room with the body bent and the hand pressed on the abdomen. These symptoms come under the proper heading of chronic appendicitis and should be more fully recognised than they are now. To these three remarks I should like to add another as to the ridiculous classification of appendicitis. Every monograph on the subject begins with a ridiculous list of forms of appendicitis—the gastric form and so on—and if you discuss a case with a medical man he often says: "Do you think this is catarrhal or suppurative, or what is it?" This same elaborate classification has a place in the history of all maladies. There was a time, for instance, when there were about 15 or 20 different forms of pleurisy and these all came down to one thing. How many forms of synovitis were there 20 years ago? How many forms are there now? Inflammation of the apppendix, catarrh of the appendix—what does it lead to? Ulceration, stricture, perforation, gangrene. There is nothing to be gained by this ridiculous classification. Appendicitis is an inflammatory trouble due to certain micro-organisms and it begins as a catarrh, excepting cases of actual torsion. I do not propose to say anything in detail as to the causes, or reputed causes, of this malady. We know it is most common in young people, 80 per cent. of the cases coming under the age of 30 years and, curiously enough, 73 per cent. occurring in males.

I should like to draw attention to certain factors in the cause of appendicitis which I think have a good deal to do with the treatment of the disease. The first factor is the extraordinary effect of a tropical or sub-tropical climate. I have often said that, although my practice is in London, a large proportion—I will not say the majority—of my patients come from tropical countries, not necessarily hot countries but countries in which intestinal trouble is inevitable, such as India, the Straits Settlements, China, South Africa, and other places akin to them. It is obvious how these cases are so frequent; persons with a disturbed appendix go to a country in which intestinal troubles are common and being more liable to the disease they contract it. I think therefore that no person should be allowed to go to a tropical country if he is a suspected subject of trouble in the appendix. It is very noteworthy how persons who have had a little suspicion of this malady in themselves will come to an acute termination of it after having gone to reside in a tropical or sub-tropical climate. Another curious point is the frequent coincidence in the female subject of an attack of appendicitis with the menstrual period. It cannot be an accident, because in one particular case that I had the attack occurred on the fourth or fifth day and never varied from that. One might say that out of nine or 10 attacks in females perhaps as many as four or five will be associated with the menstrual period. Of course, that is explained by the circumstance that the two organs concerned are closely allied and that they certainly can mutually disturb one another. I have actually seen a cystic ovary in a child, aged 10 years, and attached to that cystic ovary a diseased appendix; I was

unable to arrive at the conclusion that the appendix was the cause of the cystic condition of the ovary. Anyhow, these two organs are close together, and I need not remind you of the fact, which has been well demonstrated, that they have the same lymphatic arrangement. The association of these two maladies is very common and I think it should be a matter of routine in every case in which the appendix is removed in the female subject that the right ovary should be inspected, because the cases in which this organ has been so diseased as to need removal are very striking. One must remember that fact in the causation of appendicitis because we cannot get away from the fact that an abiding ovarian disturbance may induce trouble in the neighbouring organ or *vice versâ*.

The last point in this connexion is one that I am sure will be at once agreed to by everybody in this room and it is this. If there is one solitary factor in the production of appendicitis which is overwhelming it is a loaded cæcum. I really think it is a little exaggeration, but not a gross one to say, that if loading or overloading of the cæcum could be avoided there would be exceedingly little appendicitis. That is so almost uniform a feature of this trouble that one need hardly go into the history of some of the cases. You know what these histories are—a child with teeth overlapping, a man with no masticating teeth to eat meat, the commercial traveller who has his meals all over the country and eats and drinks and smokes too much, and a man who habitually bolts his food. Nothing plays, I think, so important a part in the prophylactic treatment of appendicitis as the recognition of the fact that if the cæcum can be kept free from indigestible food and undigested food the risk of attack is very much minimised.

With regard to clinical matters it would be a gross waste of time of this society if I were to deal in any way with the clinical phenomena of this common trouble. But in this connexion I want to deal with one solitary point—with the so-called McBurney's point. Tenderness at this magic spot has become a sort of talisman; it is an inspired sign, it is a sort of religious stigma, it is the touchstone of the disease. The hand of the experienced man is put on the spot and there is tenderness and the patient has got appendicitis. I need not remind you where this spot is, but let me say what is said of it. It is said to be always present in every case of appendicitis, it is said to be not present in other troubles met with in the abdomen. It is said to indicate the seat of the disease, it is said by some to indicate the position of the diseased appendix. It is said by others who are more cautious—by McBurney to wit—that it actually indicates the precise space of the appendix. Well, now, that is the most modest account that could be given of the possibilities of McBurney's point. Beyond that there is a great deal more, but that is keeping soberly within the limit of fact. The construction that I would venture to put upon it is this. There is a certain tenderness in the right iliac fossa in appendicitis and McBurney's spot corresponds roughly to the centre of the right iliac fossa and therefore it is reasonably the place where tenderness is exhibited. Next it is a symptom quite common in other maladies, most notably in colitis. In the next place I should say that it is a feature exceedingly common in perfectly healthy individuals in a quite normal state. Last of all, it does not indicate the situation of the disease and it does not indicate, which McBurney insists that it does, the situation of the base of the appendix. Any man operating and cutting through the situation at this point will know perfectly well that there may be tenderness there and the base of the appendix does not correspond to that spot. Feeling that it was a matter that needed investigation I asked Dr. A. Keith if he would carry on investigations on certain lines that I indicated and I am deeply indebted to him for the admirable manner in which these investigations were carried out. What struck me was this. So many persons are tender at certain points in the right iliac fossa and very often acutely tender. But there is no such point on the left side and there must be something, therefore, anatomically different there. What is it? The ureter or what? This is how the facts come out. Sections were made along the spino-umbilical line; that line measures in the normal male adult six inches and it crosses the rectus muscle at the anatomical point known as Munro's point and it roughly corresponds there to McBurney's point. Well, now, the ureter has nothing to do with Munro's point because it does not cross the line there. Exactly the same condition exists on the left side, so that nothing is to be learnt from that. The next thing is this. The structure that exactly comes beneath that point is the ileo-cæcal valve. The tender thing that can be discovered in the body of a healthy person at that exact spot is the ileo-cæcal valve. As you know, all orifices are peculiarly well supplied with nerve fibres and are peculiarly sensitive, such as the sphincter of the anus, the orifice of the pylorus, and other sphincter-like openings. That that is the cause of the tenderness in that particular spot admits of no dispute. The base of the appendix, you will be surprised to hear, is one inch below McBurney's point, as discovered in 50 bodies prepared by formalin. Dr. Keith was good enough to examine the bodies of 27 living medical students with this result:—In 11 the point of tenderness was exactly on the point; in nine it was a little above the point; and in four it was a little below the point. Those data pretty nearly correspond *pro rata* with the condition found in 50 hardened bodies by formalin. Moreover, in only three out of 27 students was there any particularly tender spot in the right iliac fossa; in none was there any tenderness discovered on the left side of the body. That, I think, should render definite the circumstances about McBurney's point and the part it plays in this trouble. Any medical man present who has examined in detail cases of colitis will well know the extraordinary tenderness there is often discovered and maintained at McBurney's point.

I want at this stage to say one word about phantom appendix—an appendix described as vertical, of the size of your little finger, and sometimes lying obliquely. That appendix is a phantom and it is a curious phantom. The vertical appendix is due to constriction of the uppermost fibres of the rectus muscle that can be often excited by stimulating the nerve as it enters the muscle. I need not remind you that the appendix, the cæcum, the peritoneum surrounding them, and the muscles of the abdomen which cover them and the skin which covers these muscles are all supplied by one nerve, in the main the eleventh dorsal. Even when the patient is under anæsthesia a little hard pressure in that spot where the nerve enters the rectus muscle will bring out this vertical appendix.

In order not to take up too much of your time I think I might finish what I have to say by dealing with what, after all, is the most interesting part of my subject—the operative treatment of this trouble. It is most remarkable that this subject, which one would think is simple enough, is perfectly bewildering by divergent opinions coming from men whose authority one cannot repudiate and must recognise, and added to this is the difficulty that we are still entirely lacking in reliable statistics. What is the general death-rate from appendicitis? Of course, hospital cases are cases of certain gravity and in those cases the death-rate is estimated at something like 15 per cent. But take 10 medical men who have practised in a large town for, say, 20 years and therefore must have had to deal with a great many cases of appendicitis. What number have they lost in that period? They would be shocked at the suggestion that they had lost 15 per cent. It is impossible, therefore, to get quite at the figure. But records have been obtained casually from practitioners and also from the German army in time of peace. It is curious that in both these instances the figure comes out at 5 per cent. I know that this figure is open to dispute, but still I do not think that out of 100 cases of appendicitis I have lost more than five in the course of my private practice. I think, therefore, that 5 per cent. may be accepted as the general rate of mortality in appendicitis. When one goes further into the question of operative treatment of appendicitis the whole crux is, What is to be done during an acute attack? There are certain men whose opinions must be listened to who assert that you must operate in every case of appendicitis as soon as the diagnosis is made. I know that that is not perhaps quite the common position taken up by surgeons in this country, but, as you know, it is almost universal—at least, in America. An operation, they say, should be carried out as soon as the diagnosis is made—not on the second, third, fourth, or fifth day. There are others who operate only on compulsion; they say, "No, the majority of the patients get well," and they only operate in exceedingly acute cases in which pus is evident or in cases that are really spun out and going to such a length that they feel there must be some condition within the iliac fossa which can only be reached by operation. Those are the two sides of it.

Speaking from no other than the very uncertain ba[illegible]s of

one's own experience I would take the opportunity of submitting these isolated points to your consideration, believing that they form the basis upon which something like a sound opinion can be arrived at. First of all there are advocates of what may be called indiscriminate operation. They use terms of this sort—"You must operate; the appendix is ruptured; there is perforation; there is acute peritonitis; there is gangrene." And mark—and this is the point that I want to draw attention to—these expressions are used exactly in the same sense as you use such expressions as "There is perforation of the bowel; there is a perforating ulcer in the stomach; there is gangrene or hernia of the intestine." And so they say an operation must be carried out even before a reasonable diagnosis has been made, as soon as an attack is suspected. What I very seriously object to is this: that the two things are put in the same category. It is an absolutely false analogy and distinctly misleading. Is it for one moment reasonable to put perforation of the appendix in the same category with perforation of the stomach? It is monstrous. Not only can a perforation of a fair size occur in the appendix but a fair degree of gangrene may be met with without causing serious symptoms. I have found a concretion lying outside the appendix one month after an attack, when all the symptoms have subsided and without a single drop of pus. That must have been due to rupture of the appendix or perforation of the appendix or, if you like, gangrene of the appendix. Is it very reasonable, therefore, to use those terms in the same sense as you use the term rupture of the bowel, gangrene of the ileum, or perforation of the stomach? The analogy is absolutely unjustifiable. The second fact that I do not think can be pressed too strongly is this. The very great majority of all cases of appendicitis get well spontaneously. I am speaking of a whole series of cases which come under the care of a medical man in general practice, and I think that it may be said that we are not very far from the truth when we say that the death-rate from appendicitis is 5 per cent. The third fact, which I think should be emphasised as strongly as the last one, is this: operation during an acute attack of appendicitis is attended with great risk to life. What that risk is we again have great difficulty in expressing in figures because they are not easy to get hold of. But we must take things as they are, and I have been at infinite pains to go through records by hundreds and the death-rate in cases of operation—I do not say what operation—during an acute attack comes out at about 20 per cent. Some of the hospital records come out higher than that. The fourth point is a little by the way. Relapses may occur after an operation carried out during an acute attack and that is a thing which must not be quite pooh-poohed. The last thing which I should like to impress upon your memories in very large letters, so to speak, is that the removal of the appendix during the quiescent period is attended with infinitely small risk.

If these facts are admitted—perhaps you may say they are not accurate or they are distorted, but I do not think they can be very much out of what is actually the fact,—if these facts are accepted, then I think the line of treatment is not difficult to establish and may be pretty clearly defined. Acting upon what one believes to be the best information that the records at present provide in the various directions that I have indicated I think one comes to some such conclusion as this: all that we know of the pathology of inflammation of the appendix is positively opposite to the teaching that operation should be carried out the moment the diagnosis is made. I think that that cannot be put too strongly. We know a good deal about the pathology of this trouble and I think that what we do know will not support the dictum that as soon as the diagnosis is made operation should be carried out. The second point is this. An immediate operation should be carried out in all the ultra-acute cases. It is often said that you cannot diagnose them. I would venture to controvert that statement. I believe all these cases are easily recognised, although there are two perfectly distinct types of these ultra-acute cases. There are some in which the local manifestations are not very striking and where the overwhelming symptom is that the patient has introduced into his system a gigantic dose of poison, with a temperature of 104° or 105° F., with the pain not very striking. Those are cases of septicæmia of the most intense character and the patient dies, perhaps, within 36 or 48 hours. In such cases the operation will probably do no good, but it can do no possible harm and it should be as a matter of positive routine carried out. The second class of acute cases also cannot be mistaken. It is exactly parallel to perforation of the stomach and I do not think anyone can have any difficulty in recognising the acute peritonism. The ultra-acute cases cannot be operated upon too soon. The third proposition, which I hope also will meet with your approval, is this: an immediate operation should be carried out as soon as there is any suspicion of pus. I suppose that will be universally accepted. I do not want a demonstration of pus but a reasonable suspicion of it.

If those three propositions are accepted that takes us a long way. What, then, with regard to the residue of these cases which represents the great mass of cases of appendicitis? I have excluded all the ultra-acute cases and I have excluded those cases in which there is pus, and I think that in the cases that remain it is seldom imperative that an operation should be discussed until about the fifth day. I think that you will agree with me that in a case of appendicitis, if the temperature comes down and is getting towards normal about the fifth day your anxiety is becoming comparatively slight. And because the temperature keeps up after that day the case is not necessarily doomed, though very probably it will have to be dealt with. Having excluded the cases that I have mentioned I think that the phenomena associated with this malady will bear out that somewhat moderate suggestion in the matter of practice that the surgeon should hold his hand until some such time as the fifth day has been reached when the requirements of the case will have been made quite manifest. Another matter that I will trouble you with is with regard to operative treatment carried out during the quiescent period. It so happened that in a paper which I read before the Royal Medical and Chirurgical Society in 1887 I ventured to suggest that appendicitis when relapsing should be treated by removal of the appendix during the quiescent period. Looking back on the discussion which followed that paper it is curious to note how very feebly it was received and how the method advocated therein was scarcely accepted at all as a reasonable method of treatment. In that particular discussion one physician of considerable experience said that in the whole of his life he had never seen a case of typhlitis that could possibly have called for surgical interference of any sort. So that the reception of that paper was one which, I must confess, condemned me very much. Still, I do not think one has any reason to complain of the infrequency with which the operation is carried out at the present day. I have since that particular date removed the appendix during the quiescent period over 1000 times and out of that number I have lost two patients. I could without being very Jesuitical exclude one of those cases because it was not primarily a case of appendicitis but where there was a mass in the right iliac fossa and where as a result the appendix was concerned. But I will acknowledge the two deaths.

The next point that I want to ask you to consider is this, and it is a difficult matter in practice: When should this operation be carried out? A patient comes to you and says, "I have had one attack," and you might almost tell him that the operation is so trifling that he should have the suspected organ removed. But the whole question is summed up in this: What is the probability of relapse? It is a curious thing that the percentage of relapses has greatly gone up. At one time there were said to be very few relapses—from 20 to 30 per cent. I am quite certain that it is safe to say nowadays that the great majority will relapse. Therefore I think it could be put down, as a line to guide one in directing this matter, that it is desirable to remove the appendix after the first definite attack. The line of argument is this. In the majority of cases there will be a relapse and the patient must feel that the weight of figures is against him. Secondly, the risk of the operation is really almost infinitesimal and will in time become quite trivial. There is just this little sort of comment to be made on a bold assertion of that kind. If there has been an abscess in the first attack then I think an operation may be put out of court altogether because that abscess will in certainly 95 per cent. of the cases obliterate the organ and render it harmless.

Well, then, I have been frequently asked this question: What has been your experience of cases that do not relapse? Going back as I can now over some years, and having seen some thousands of cases of appendicitis, I have seen a great many patients who have had only one attack and having known their career for a number of years—I do not want to quote them as exceptions to any rule but to put them forth as cases in which perhaps that rule

may be subjected to consideration and perhaps relaxed—my experience has been this. I have seen children in whom an attack of appendicitis has distinctly followed the lodgment of some mass in the cæcum. In one such case the child ate a lot of nuts and had appendicitis with cramp and hardness over the organ. In that case where there has been only one solitary attack following the lodgment of some mass in the cæcum the child may never have another attack unless it repeats the same alimentary performance. The other class of case is this: the adult who has a great many errors in the matter of feeding to correct. For instance, the commercial traveller who perhaps has no masticating teeth eats anything he comes across at all times of the day: lunches at one, two, or three o'clock, rushes into the bar with his hat on the back of his head, eats anything that happens to present itself, bolts it, and goes about his business in an atmosphere of tobacco and alcohol. That man has gross dietary errors to correct and if they be corrected that man may never have another attack. I think that in the consideration of cases of appendicitis the circumstances in those two classes of the disease that I have mentioned must be taken into account. I might, perhaps, just quote one such case. A medical man was working in a colliery district under the very worst possible conditions. The man was up day and night and got his meals anyhow, and he practically had no masticating teeth. He was a man temperate in every respect. Eventually he inherited a fortune, a very large sum of money, and of course the very first thing he did was what any of us would have done—he abandoned the profession and sought opportunity for rest. Previously he had had one attack of appendicitis and he now came to me saying that he wanted to have some enjoyment out of life and he thought that the first element of success in that direction was to have his appendix removed. I thought that perhaps he might make a little cult of his appendix, so it was agreed that it should not be removed. That man observed the general rules of health and I see him occasionally and he has never had a single attack since. With regard to chronic appendicitis I think that in every such case the appendix should be removed when there is no other treatment for it.

Last of all I must say this: the removal of the appendix is not a panacea for every ill in the lower part of the abdomen, because there is apparently an impression abroad in the present day that any kind of disturbance below the umbilicus must of necessity involve the removal of this very much discussed organ.

The Hunterian Lecture

ON

SOME POINTS IN PRACTICAL SURGERY SUGGESTED BY THE STUDY OF THE LIFE AND WORK OF JOHN HUNTER.

Delivered before the Hunterian Society of London on Feb. 26th, 1902,

BY REGINALD HARRISON, F.R.C.S.ENG.,

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MR. PRESIDENT,—When your predecessor asked me to deliver the Hunterian Lecture this year I felt less diffidence in accepting the honour than I should otherwise have done because I knew that your society had never ceased to show its reverence for the illustrious man whose name it bears in the most practical and useful forms.

I am taking for my subject some points in practical surgery suggested by a study of the life and work of John Hunter. It would be difficult to find a more agreeable or improving occupation than that of recognising and tracing how much we are indebted to him for the rapid strides our art has made in almost every direction. Though Hunter did not give us anæsthetics or antiseptics, he prepared surgery, by placing it on a scientific basis, for the reception of these two grand discoveries of this age.

[Mr. Harrison proceeded to show that Hunter's teaching as to the cure of hydrocele was true even of the present day. He proceeded:]

Hunter's observations on perineal urinary fistula are interesting. He says: "In whatever part of the urethra the disease is the external opening seldom heals as long as the seat of the disease has no disposition to heal. Let us compare this disease (urinary fistula) with the state of parts after lithotomy. If the incision is made in sound parts, and the whole injury be a stone which is extracted, the parts readily heal in spite of the urine passing through that channel. This, then, shows that there is another cause of their not healing." Further he states: "To cure this disease it is necessary first to make the natural passages as free as possible, that no obstruction may arise from that quarter—and sometimes this alone is sufficient—for the urine finding a free passage forwards is not forced into the orifice and the fistula heals up. But the dilatation of the stricture is not always sufficient; it is often necessary to perform an operation on the fistulæ when they alone become the obstacle to the cure." Here we have in a few lines the pathology and treatment of urinary fistula with a reservation for exceptional or complicated cases. There can be no doubt that in the larger proportion of cases where a stricture of the urethra co-exists with a urinary fistula, or is the cause of it, the removal of the stricture by some form of dilatation, with or without the retention of a catheter, as Hunter suggests, is sufficient in itself to effect a cure of the fistula, and so long as the patient is careful in keeping the stricture dilated such a consequence is not likely to recur. But this consideration by no means covers the whole ground. Water or urine will invariably escape through the easiest channel. Cases are frequently met with where it has thus been found impossible to heal up these sinuses even though the stricture has been fully dilated. This would seem to imply that either owing to a state of urethral spasm to which persons are more liable who have had obstructions of this kind, or, as Hunter suggests, to the precise manner in which the false routes communicate with the urethra, it is impossible to prevent some urine from entering them during the voluntary act of micturition. Either of these reasons is sufficient to explain this difficulty in closing a fistula.

Then arises the question, What more can be done to bring about a closure of these fistulæ? for nothing can be more intolerable to a patient than having to go about with a leaking and discharging sinus that fails to heal. Hunter's reference to the making of wounds which "readily heal in spite of urine passing through them," to use his own words, has an important bearing upon this point, for it will be recognised that their substitution for those which show no tendency to repair, but, on the contrary, to remain patent as suppurating and offensive sores, may often be advantageously utilised. This point has frequently been demonstrated in practice, and proved the quickest and safest way of dealing with certain forms of urethral stricture complicated with one or more urinary fistulæ. Thus the secondary proceedings to which Hunter refers—namely, operations on the fistulæ themselves—may be obviated as unnecessary when the stricture is entirely freed and the urine so efficiently drained as to be prevented from entering unnatural channels. And it is upon the two governing principles as laid down by Hunter in the passage quoted as being generally applicable to this class of cases that I would desire to lay stress. These are (1) the necessity of securing a free outlet forwards for the urine, and (2) the provision of a wound when required for this purpose which will, as Hunter states, "readily heal in spite of urine passing through it."

I have already observed that in dealing with the expulsion of urine from the bladder it must be remembered that its course is entirely determined by the degree of resistance that is opposed to it. If this is less in the case of a false or an unnatural route it is certain to select this in preference to the natural channel, whatever may be the condition of the latter. Hence to divert the urine from these fistulous openings and cause them to dry up and heal from want of use it is a first principle to secure its escape by the natural channel, or, if the latter is permanently damaged, by a substitute. In the matter of urine drainage much depends on the nature and position of the wound that is made for this purpose. We see this, for instance, in the case of wounds made for median lithotomy as compared with those made for lateral lithotomy. The former will not drain thoroughly and incontinently without a suitable drain-pipe or other apparatus. The latter is entirely independent of all kinds of apparatus

and the drainage will be free and incontinent until repair has made considerable progress. I do not think sufficient has been made of this distinction.

Hunter says, when speaking of the effects of enlargement of the lateral lobes of the prostate: "A small portion of it which lies behind the very beginning of the urethra swells forward like a point, as it were, into the bladder, acting like a valve to the mouth of the urethra. It sometimes increases so much as to form a tumour, projecting into the bladder some inches. This projection turns or bends the urethra forwards, becoming an obstruction to the passage of a catheter, bougie, or any such instrument, and it often raises the sound over a small stone in the bladder so as to prevent its being felt." In such cases, he remarks, "I have frequently passed first a hollow elastic catheter till it has reached this point, and afterwards a stylet or brass wire properly curved so as to go over the prostate gland."

Hunter gives a very sound piece of advice in reference to the importance of surgeons instructing patients who are liable to urethral obstructions or to enforced retention of urine in the art of passing a catheter for themselves. He observes: "This practice of the patient under a surgeon's eye, by which he is taught how to pass them, becomes more necessary as strictures are diseases that commonly recur; and therefore no man who has ever had a stricture and is cured of it should rely on the cure as lasting, but should be always prepared for a return, and should always have some catheters with him. He should not go a journey, even of a week, without them, and the number should be according to the time he is to be absent, or to the place whither he is going, for in many parts of the world he cannot be supplied with them." No better counsel could be given than this. Now, however, it would not be regarded as complete without attaching instructions as to the necessity for employing scrupulous care in cleaning these instruments and rendering them innocuous, so far as this is possible, by the use of antiseptics.

In reference to the latter subject I cannot find that Hunter recognised as possessing any striking peculiarities what at the present day we are accustomed to speak of as urinary fever. It would be very interesting, Sir, if at your bidding we could hear from him his opinion as to its etiology. Which view would he take—the neurotic or the septic, or would he recognise both? It is a difficult question to determine and much variety of opinion in reference to it prevails. For my own part I cannot see how and where the nerve theory of causation comes in, though I fully recognise how largely the sexual apparatus is innervated and how sympathetic it is. I would ask what have been the results of the extension of the principles of antiseptics to the surgery of the urinary organs? What has followed the more stringent precautions that we as surgeons impose upon ourselves in all that applies to the use of instruments to these parts? and what happens commonly when we or our patients fail in giving the fullest effects to these antiseptic provisions? Have we thereby lessened or increased the number of cases which would come under the designation of urinary fever? Again, how does it happen that the most frequent and fatal forms of urinary fever are associated with the smaller lesions and not with the larger? How insignificant must be the nerve damage which is occasioned by an internal urethrotomy or the passing of a sound or catheter as compared with that of a lateral lithotomy for the removal of a large calculus, as used to be practised. And yet after the latter we seldom, if ever, saw anything more than the febrile excitement which is usually associated with all wounds which are not protected by antiseptics. Again, an unprotected internal urethrotomy wound is almost invariably followed by a rigor and some degree of urinary fever. Whereas if we considerably add to that lesion by a perineal section for the insertion of a drainage-tube into the bladder, no urinary fever follows if the latter acts perfectly. Lastly, what has sterilisation of the urine done in reference to the liability to urinary fever? The late Dr. Palmer of Louisville, whom I knew well, showed how by sterilisation of the urine by administering boric acid beforehand, the liability to this fever was almost reduced to *nil* in the case of such operations as internal urethrotomy. By evidence of this kind the septic origin of urinary fever is, I believe, substantiated as against the nerve theory.

The question which I have thus raised as to the etiology of so-called urinary fever is one of much importance, for if it is septic, as I believe it is, it should be amenable to precautionary antiseptics. For some time I have been acting on this principle. If I ever cause, either accidentally or designedly, a lesion of the male urethra, as by passing a sound or a catheter or in performing an internal urethrotomy, I am in the habit of putting some antiseptic into the bladder immediately after, which would seem to have the power of temporarily sterilising the urine and rendering it less likely to infect the individual through any small lesion that may have been caused. For instance, after an internal urethrotomy on completing the operation I put into the empty bladder some ounces of boric lotion or of a solution of corrosive sublimate, the latter in the proportion of 1 in 6000, and leave it there. In this way I believe that I have succeeded in averting the absorption by the wound of intensely poisonous compounds derived from the urine, probably of the nature of ptomaines, which indicate their presence in the system by the characteristic rigors and elevation of temperature with which, unfortunately, we are so familiar. By following this local treatment up by the internal administration of certain drugs which more or less sterilise the urine, as in Dr. Palmer's experiments with boric acid, the development of urinary fever in this class of operation may often be prevented. The best sterilisers for this purpose are urotropine, benzoate and salicylate of soda and borocitrate of magnesia. The last-mentioned is the only digestible preparation of boric acid I know of which can be given in sufficiently large doses to effect this purpose. Quinine and salol have a similar action, but they are not so well adapted as those mentioned.

We would do well if we paid more attention to the subject of urine sterilisation in its relation to the prevention and treatment of urinary fever, in connexion more particularly with some of the minor operations on these parts. In some surgical works hardly any reference is made to this as a necessary part of the preparatory treatment of persons about to undergo operations involving these organs. Hence urinary fever and the complications arising out of it, such as suppression of urine, are far commoner than they should be.

Hunter, when evidently speaking of the treatment of residual and retained urine in cases of enlarged prostate, makes a very pertinent observation. Referring as to how the urine may be evacuated in these circumstances he says: "There are three ways in which it can be done, one by allowing the parts to do their own business as much as they can, and this at first sight might be supposed to be the very best, but it is in some cases the very worst." He gives prominence to the view, now as then entertained, that there is some degree of positive risk connected with non-interference in cases of this kind which may arise from persons carrying about with them constantly that which ought to be spontaneously evacuated. Where this can be done with impunity and where it is attended with more or less risk is sometimes a fine point to decide, but it is one that should always have our careful consideration.

No one, I am sure, would wish to introduce a patient to what is called catheter life—for life it usually is—prematurely or without sufficient reason, but the necessity for the use of the catheter under certain conditions of bladder unrest and urinary change should not be overlooked or disregarded. States of exhaustion and sepsis may thus be imperceptibly impending. Because an elderly man carries about constantly with him two or three ounces of normal urine is not sufficient reason why he should use a catheter. On the other hand, an ounce or so of decomposing urine contained within the bladder in some depression or sac may readily prove a source of infection which should be removed and dealt with, for thus the whole amount of urine may be rendered offensive and poisonous.

Amongst the many subjects that Hunter occupied himself with were the periodical changes which took place in the sexual glands of birds and certain mammals. In some observations on the function of the prostate gland in man and the lower animals Mr. Joseph Griffiths of Cambridge quotes the following from Hunter's works: "The prostate and Cowper's glands and those of the urethra in the perfect male (bull) are soft and bulky. In the castrated animal (bullock) these are small, flabby, tough, and ligamentous, and have little secretion. Especially marked is the change when the animal is castrated when young."[1]

Passing from these observations, I will proceed to notice some points connected with the surgery of this part. I do not think there can be any doubt that there are various

[1] Journal of Anatomy and Physiology, vol. xxiv.

states of obstruction arising out of prostatic hypertrophy where it is impossible to give adequate relief to the patient by the use of the catheter, however skilfully it may be employed. Further, there are instances where persons, either from sentiment or more cogent reasons are willing to incur some degree of risk to their lives to escape the annoyance of catheter dependence. For many years it has been laid down as a guiding principle that persons so situated by reason of an obstructing prostate should be content with their lot so long as the process can be carried on with a reasonable amount of ease and satisfaction to themselves. This principle seems to have been arrived at on the following grounds: first, because catheter dependence is not inconsistent with the maintenance of good health and the attainment of an average existence or even a life considerably exceeding this limit; and secondly, because the removal of more or less of the prostate did not necessarily mean that normal micturition would in all cases be permanently restored.

Evidence seems to be accumulating to indicate that prostatectomy may be practised with greater safety and certainty than it was formerly. This is due, partly to improved methods of operating and partly to our recognising more fully the varieties of form and structure which the hypertrophied prostate presents. Our desire to discover some uniform method of treatment appeared to retard the surgery of this part, for I have little doubt that Dr. William White's important suggestions and practice relative to the induction artificially of shrinkage of the prostate tended in some measure to draw our attention from Mr. McGill's work long before we had acquainted ourselves with all its merits and were sufficiently informed as to its limitations.

It would be premature at present to draw conclusions from figures relative to the more recent developments of prostatectomy. Taking, however, cases where the enlargement is mainly due to what may be spoken of as enucleable adenomas[2] which by their early and somewhat rapid development appear to have squeezed out of existence, even to the limits of the fibrous capsule, the original prostatic tissue, the mortality is not large. Fuller[3] writes: "The mortality attached to prostatectomy is at the present time (1900) in the neighbourhood of 15 to 18 per cent. If one operated simply on selected cases it ought to be much less." My colleague Mr. P. J. Freyer[4] has recently published the results of eight cases with one death at the end of three weeks. These cases are of much interest and importance and have undoubtedly given a fresh impulse to enucleation in connexion with suprapubic prostatectomy. Mr. H. L. Barnard[5] has recorded two cases, both successful, whilst from my own practice during the past year I can mention five cases without a death, as yet unpublished, and in the practice of some of my colleagues five other cases, also unpublished, without mortality and with excellent results.[6] Within my own knowledge, therefore, I can bring forward a series of 21 cases in which this operation has been performed with only one fatality. It is hardly fair, perhaps, to take such a limited number of cases as the basis of a statistical statement, but it will be seen that far from Fuller's mortality of 15 to 18 per cent. being reached, the mortality in this series only totals 5 per cent. Even the last figure is capable, I believe, of a further reduction by utilising the less formidable process of urethral prostatectomy as will first be illustrated, or by substituting perineal tubing with control drainage[7] in cases physically or otherwise unfitted for vesical prostatectomy. Nor should I omit to mention a paper published by Mr. Mayo Robson,[8] which included 12 cases of prostatectomy with one death. From a different standpoint Professor Albarran[9] of Paris recently recorded 16 cases of perineal prostatectomy which he had completed without a death. The operative prospect from all sides may therefore be regarded as favourable. Viewing these figures as a basis representing the results of prostatectomy and comparing them with what happens to persons leading a catheter life, I am inclined to think that they favour the former rather than the latter. Take, for instance, the man who has to catheterise himself 1000 times or more in the year. What is his expectation of life as compared with the individual who incurs the risk of a prostatectomy and has, after a successful operation, no further need for this instrument? I am disposed to think, from long observation and knowledge of persons habitually using and dependent upon catheters, that they eventually succumb to one or other of the casualties incidental to this form of instrumentation.

Then, again, our views relative to the paralysed atonic bladder associated with the hypertrophied prostate certainly require remodelling under the light that prostatectomy has thrown. There can be no doubt that after this operation persons have completely recovered natural bladder power after its suspension for from one to seven years. The possibility of this has been doubted and more than once publicly challenged. A reference to such records as I have mentioned is sufficient, however, to support this statement.

Time will not permit me to speak of the relationship, which Hunter was the first to point out, that existed between the testes and the prostate and to offer some remarks on the employment of vasectomy in connexion with some forms of urinary disorder. I refer more particularly to the influence which this operation may exercise in preventing and arresting prostatic enlargement in a very simple manner, and further, in interrupting the extension of inflammations and other microbic conditions from above downwards and *vice versâ*. These observations have already been placed before the profession and are utilised in practice. I will therefore pass on to notice the application of prostatectomy to some cases of enlarged prostate complicated with vesical stone.

As matters at present stand there can be no question that in the case of stone in the bladder happening in young children and adults before the prostatic age is reached its removal should be effected by crushing, save under exceptional circumstances. When, however, the period is reached when prostatic hypertrophy may be the cause or the complication of a bladder stone the liability to recurrence after removal by crushing becomes exceedingly frequent and has to be taken into consideration.

In early days my practice, so far as the operative treatment of stone was concerned, included a considerable number of young male children, and I remember tabulating a large number of lateral lithotomy cases in these subjects, with a record of "no deaths and no recurrences." More recently I published a paper[10] which included an analysis of 110 persons upon whom I operated for stone in the bladder during the years 1890–97. This comprised 101 litholapaxies, three perineal lithotrities, two suprapubic lithotomies, and four median lithotomies. Of the 101 litholapaxies or crushing operations, though the mortality was only a fraction over 5 per cent., 23 of the patients were known to have one or more recurrences for which I treated them on subsequent occasions. These occurred for the most part in persons of an advanced age with enlarged prostates who were more or less dependent on their catheters and possessed but little power of voluntary expulsion. Thus by trapping gravel and concealing fragments of grit prostatic hypertrophy considerably adds to the liability to vesical stone and its recurrence in the later portion of male life. For reasons of this kind many surgeons have considerably restricted the use of litholapaxy, and have substituted for it suprapubic cystotomy. Writing to me recently on this subject and in view of a reduced mortality after the latter operation, Mr. W. Cadge states: "I should, were I still in active practice, do abdominal cystotomy, not only for large stones, but for cases in which the stone is of moderate or small size, the patient depending wholly on the catheter, the prostate large, and the bladder misshapen or pouched; for cases, in short, which constitute the large proportion of recurrences." The more recent developments in prostatectomy will, I think, add considerably to the force of Mr. Cadge's remarks.

In persons suffering from much enlargement of the prostate and catheter dependence, complicated with stone in the bladder, after litholapaxy has failed once, or perhaps twice, to prevent recurrence of the latter suprapubic cystotomy will have still further claims for consideration, not only because it permits of the removal at one operation of the stone, but a contributing cause of it, as well as the catheter dependence,

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[2] "A Case of Lithotomy where a Portion of the Prostate (adenoma) was also successfully Removed," by Reginald Harrison, Transactions of the Royal Medical and Chirurgical Society, 1892.

[3] "Diseases of the Genito-Urinary System," pp. 412, Macmillan and Co., New York and London, 1900.

[4] Brit. Med. Jour., July 20th, 1901, and Feb. 1st, 1902.

[5] THE LANCET, 1901.

[6] Sir William Mac Cormac had a very successful case shortly before his lamented death where a large adenoma was thus removed together with numerous calculi. The specimen is in the museum of the Royal College of Surgeons of England.

[7] Polyclinic and Medical Graduates' Journal, November, 1901.

[8] Brit. Med. Jour., vol. ii., 1894.

[9] Trans. Association Française d'Urologie, Paris, 1901.

[10] "A Further Contribution to the Surgery of Stone in the Bladder," op. cit.

which so frequently coexists or arises under these circumstances. I will proceed to illustrate the employment of prostatectomy by the narration of a few cases and to show what was thus removed.

CASE 1.—The following case may be taken as illustrating, not any difficulty connected with the removal of stone from the bladder by crushing or litholapaxy, but two conditions favourable to the formation and recurrence from time to time of phosphatic stone when an enlargement of the prostate is present. These were (1) the necessity existing for the permanent use of the catheter which implied the suspension of the voluntary power of urine-expulsion and whatever else the bladder contained; and (2) a specially foul state of the residual urine which co-existed and supplied a material for stone formation. The case further illustrates how the removal of the obstruction thus caused by the prostate ended these two conditions. The patient, aged 55 years, was seen with Sir R. Douglas Powell in April, 1899, with symptoms of stone in the bladder for which he was sounded. A stone was felt lying behind a prominent prostate. I removed the former by litholapaxy, the fragments weighing 296 grains of oxalate and phosphatic stone. The patient previously to the operation had been largely dependent on his catheter for a year and it was hoped that the removal of the calculus would be followed by a return of natural power. This, however, was not the case, though in other respects he made a rapid recovery after the operation. A recurrence in the form of a phosphatic stone took place and he was again operated upon in August of the same year by litholapaxy. A second recurrence occurred later and a stone was removed in a similar manner in September, 1900. Early in 1901 he had after what he had been told to dispense with it. How far this form of prostatectomy succeeded may be gathered from my examination of his bladder a year after this operation. His urine was perfectly normal and he had no residual.

The growth proved to be a pendulous adenoma and no further enlargement is likely to take place. The case shows the importance of recognising those prostatic enlargements which can be dealt with without submitting the patient to a more extended operation. Dr. J. G. Pardoe assisted me and Mr. C. Carter Braine gave the anæsthetic on these occasions.

CASE 2.—The patient, a male, aged 79 years, was seen by me in consultation with Dr. J. G. Glover. In 1897 I had removed a small stone from his bladder by litholapaxy. His prostate was then considerably enlarged, and he was entirely dependent upon his catheter. Attacks of cystitis were frequent, and the difficulty connected with the use of his instrument was constantly increasing. When I saw him again in consultation in 1901 his condition was about as bad as could be imagined and his life most miserable. I advised suprapubic prostatectomy, which was done at once. Dr. Pardoe assisted me and Mr. F. W. Braine administered the anæsthetic. The operation was a difficult one as the enlargement consisted of a prostate far advanced in fibrous degeneration and but little of it was enucleable by the finger. However, a considerable mass was removed, partly by finger and forceps, and in addition the five stones, also figured below, weighing three drachms, which were completely concealed by overhanging growths (Fig. 3). The patient did remarkably well and 21 days after the operation passed 40 ounces of urine naturally in 24 hours. He left the home at the end of four weeks and shortly after went to Bournemouth. His health is completely restored and he is

FIG. 1.

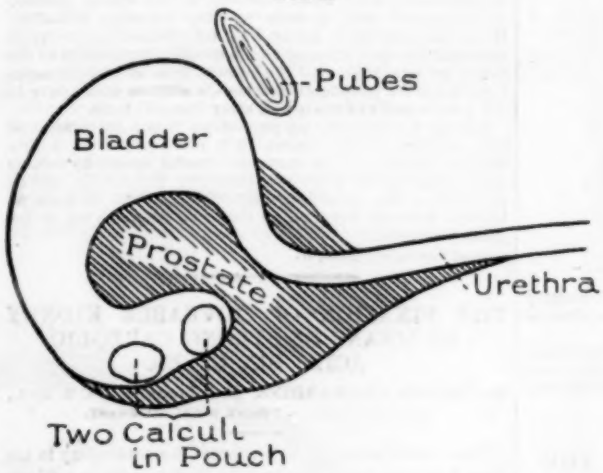
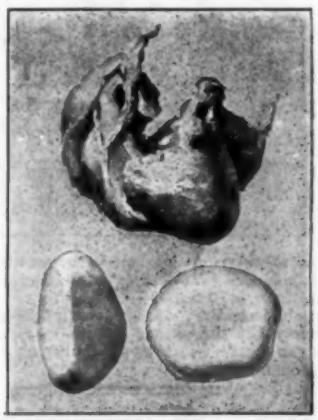


FIG. 2.



further symptoms of stone and it appeared clear that the only way of preventing these recurrences and restoring the natural function of micturition was to remove the obstructing portion of prostate. A careful examination was made by the cystoscope and I recognised the conditions outlined in the illustration (Fig. 1). It will be seen that two stones were covered by an overhanging middle lobe, with a narrow or stalk-like pedicle. Thus both gravel and urine were trapped. Guided by some previous experience of a similar kind I recognised that this form of prostatic obstruction could be completely removed without opening the bladder, an important point. I therefore punctured the deep urethra on a grooved staff as for a median lithotomy and introduced my finger into the bladder. Having thus made my way I substituted a pair of polypus forceps, and seizing the neck of the growth twisted off the excrescence as figured and afterwards withdrew the two stones which are delineated beneath it (Fig. 2). A drainage-tube was introduced into the bladder and retained for a few days, on the withdrawal of which the small wound speedily healed. He left the surgical home on the fourteenth day. He has never used a catheter since nor has he had any further recurrence of stone. He had been dependent on his catheter for over three years and never hoped again leading an active life. The case is a remarkable instance of how completely a person, even at this advanced age, can recover the normal power and function of the bladder. After seven years' catheter dependence he has been able to dispense entirely with this instrument and to exercise full control over urination.

[Mr. Harrison gave particulars of three other cases of prostatectomy. Concluding, he said:]

Though the results of prostatectomy as now being practised are very encouraging, it must be remembered that instances of carcinoma of the prostate are liable to be submitted to this process. The diagnosis between a hard fibrous prostate and a cancerous one belonging to the malignant type is not always easy to make during life. Nor, as a distinguished microscopist once said to me, can this point invariably be readily determined even after death, except from a clinical point of view. Yet the supposed rarity of cancer in this part must not be relied upon too much. I have already met with one instance in my practice, not sufficiently advanced for publication, where a carcinoma has been removed in these circumstances. So far the case has done well and relief has been given, but what about the future?

In these remarks, which I must now bring to a close, I

have endeavoured, though very imperfectly, to illustrate by a few examples the influence that one man, in the person of John Hunter (who has now been dead over a hundred years), exercised on the development and progress of

FIG. 3.

practical surgery. At no period in the history of surgery has this influence been greater or more conspicuous than at present.

The public and the profession owe a deep debt of gratitude to a society like this which devotes so much attention and attaches so great importance to all that relates to the life and work of John Hunter.

A NOTE UPON AMPUTATION AT THE HIP-JOINT.

BY EDMUND OWEN, F.R.C.S. ENG.,
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IN proportion to the gross number of amputations disarticulation at the hip-joint is, I suppose, performed more often at a children's hospital than at a general hospital. There are several reasons why this should be so. In the first place, cases of advanced hip-joint disease, for which the operation is often most admirably suited, naturally drift towards a children's hospital and the little patients as a rule rapidly pick up as soon as the hopeless limb is removed. Then sarcoma of the periosteum of the femur, for which disarticulation at the hip offers the only prospect of recovery, is particularly a disease of early life. Septic osteo-myelitis, also, which is peculiarly a disease of children, may require the high amputation.

I have assisted at the operation of amputation at the hip-joint, and I have performed it, a good many times and in a good many ways. The fact of there being many schemes for performing the disarticulation may be taken as evidence that there has been in the past no general recognition of there being any one operation of surpassing merit. Compression of the abdominal aorta by fingers or tourniquet, of the common iliac artery by the rectal lever, of the external iliac or common femoral by the fingers, or by a rubber tube applied in one ingenious way or another, or securing the vessels in the flap—each method of dealing with the main vessels has shown some evidence of defect, or, at any rate, has left a good deal to be desired. Then as regards the division of the soft parts—the planning of the flaps—there was the dashing method (particularly associated in this country with Liston's name) which gave a long anterior flap by transfixion; there were the methods by lateral flaps, and there were various racquet-shaped incisions. In later years came Furneaux Jordan's method of enucleating the femur through a long external incision and cutting through the soft parts in the middle of the thigh, or lower, the vessels having been controlled by the rubber band encircling the pelvis. This operation has, or rather the modifications of it which have been adopted from time to time have, much simplified disarticulation at the hip. But there is a still simpler method of operating, and it is the object of this note briefly to describe it.

First, the crural sheath is opened through an incision running vertically down from Poupart's ligament and the common femoral vessels are secured in separate ligatures. This takes very little time—not nearly as long as is usually taken to secure the superficial and deep femoral vessels and their bleeding branches in the cut flaps of an ordinary amputation. Then a circular sweep is made round the thigh a little above the middle, straight on to the femur, the bone being sawn through at the same level. Thus the limb is cut off square. An incision is next made on to the femur from the top of the great trochanter downwards and the bone is enucleated, some small branches of the sciatic, gluteal, or circumflex iliac arteries possibly requiring attention. If the amputation is being done for tuberculous or septic inflammation the periosteal and muscular attachments to the femur are separated with the utmost ease by a blunt raspatory, but if for peripheral sarcoma the surgeon would have to use a knife and to keep it well away from the bone.

Briefly, I would state my proposition thus: Amputation at the hip-joint is most conveniently performed after a preliminary ligation of the common femoral vessels by cutting straight across the thigh a little above the middle, and by enucleating the remaining part of the femur through an incision running down on to the bone from the top of the great trochanter.

Great Cumberland-place, W.

THE FIXATION OF MOVEABLE KIDNEY BY MEANS OF STRONG CARBOLIC ACID; SIX CASES.

BY THOMAS CARWARDINE, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON, BRISTOL ROYAL INFIRMARY.

THE method which I have adopted for nephropexy in the cases here recorded is, I believe, an improvement on methods in which scarification or peeling of the renal capsule is employed in association with other measures. It is applicable to all the recognised forms of nephropexy and gives greater security to their results.

The plan consists in freely painting the whole surface of the kidney, except the hilum, with the strongest liquid carbolic acid, so that the surface becomes covered with granulation tissue within a few days. The painting is best done after the supporting sutures, &c., have been inserted, but before they are tied, by means of a swab containing the liquid not in excess. In four of the cases—those in which the kidneys were suspended by gauze slings and packing—I have been able to watch the surface of the kidney for from 10 days to three weeks afterwards and I have observed the granulations and lymph rapidly form, followed by intimate and firm incorporation of the kidney with the surrounding tissues. The kidney could then be seen to move with respiration in conjunction with the parts surrounding it, and on pressing upon the exposed renal surface it was found to be inseparably attached even in those cases in which no sutures were used. Moreover, in a case treated thus combined with gauze packing I was able to verify the results a year afterwards, for on cutting through the old scar for the relief of pain

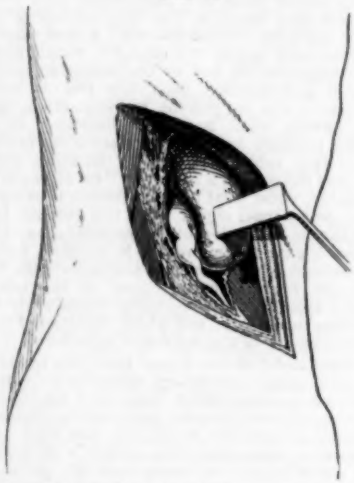
TABLE OF SIX CASES OF THE APPLICATION OF STRONG CARBOLIC ACID TO THE KIDNEY.

Case.	Date.	Age.	Cause.	History.	Method.	Remarks.	Result.
1	Feb. 15th, 1898.	Years 24	Congenital (?)	Paroxysmal pains as long as the patient could remember; nausea, vomiting, and dyspepsia two years.	Carbolisation; kangaroo-tendon sutures.	Several slight attacks of hæmaturia after getting up.	Reported as "quite well, no symptoms" 18 months afterwards.
2	August 9th, 1899.	18	—	Paroxysmal pains for two years, with nausea and constipation; frequent micturition.	Carbolisation; silk sutures.	Complete investing membranous capsule.	Gained much flesh and left the Infirmary free from pain. The patient has now been lost sight of.
3	Jan. 16th, 1900.	25	Lifting a wash-stand.	Pains increasing for six months "as if someone gripped her loin;" vomiting.	Carbolisation; gauze slings above and below, gauze packing below.	Kidney bound to fatty capsule by strong adhesions.	Quite well for nine months, then the scar became tender and painful. The scar was incised 20 months afterwards and re-sutured in layers with complete relief. The kidney was then found to be inseparably fixed.
4	April 27th, 1900.	24	—	Pains in one loin. Tried a belt for 12 months. Unable to work.	Carbolisation; gauze.	Kidney small.	Now in service and "feels very much better than she had been for a very long time."
5	May 7th, 1901.	33	Lifting a heavy box seven years before.	Pains, tenderness, and a lump in the right side.	"	Kidney adherent to the fatty capsule and so moveable as to rotate with ease.	A year later reported "no pain in side or scar unless I overwork, then it passes off after rest."
6	Feb. 24th, 1902.	33	Lifting a bed a month ago.	Very severe pain since first acute attack in the right loin; intermittent tumour and polyuria.	Carbolisation; temporary suture of the kidney in horizontal axis; gauze packing below.	Upper ureter sinuously kinked and pressed upon by the lower end of the kidney.	Completely relieved from pain.

therein of six months' duration no differentiation of the scar tissue was visible until the cortex of the kidney was actually cut into, so intimate was the fixation. For these reasons I am very favourably impressed with the method of suspension with gauze (Senn) combined with cortical carbolisation which I have carried out in the six cases indicated below. There have been no disadvantages witnessed from the application of strong carbolic acid to the kidney and there has been a marked absence of post-operative pyrexia. One patient had temporary hæmaturia on leaving her bed, which I attributed solely to tight suturing. Hæmaturia is a recognised sequel to nephropexy.

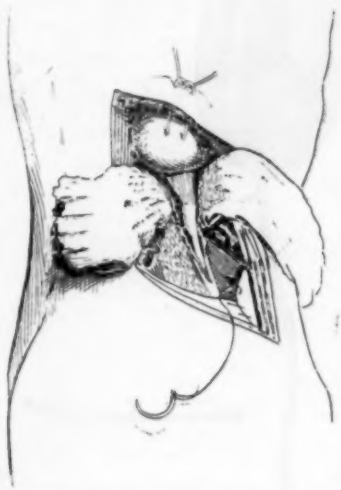
The last case was interesting from the demonstration it afforded of the mechanical conditions causing the hydronephrosis. When the kidney was freely exposed and lifted forwards (Fig. 1) the upper end of the ureter was found to be kinked and thrown into several folds and was also pressed upon by the lower end of the kidney in front of it. To correct these conditions it was found necessary first to place the kidney under the ribs and then to tilt it horizontally so that the lower end projected outwards to the wound (Fig. 2). Three temporary sutures, passing right through the parietes, were used to fix the lower end of the kidney in that position and then three pieces of gauze were lightly packed beneath the kidney, one anterior to the ureter, one behind it, and the third between them and reaching as far as the ureter. The sutures and gauze were finally removed at the end of three weeks.

FIG. 1.



Hydronephrosis: showing the kidney lifted forwards so as to reveal the contorted upper end of the ureter behind the lower end of the kidney.

FIG. 2.



The lower end of the tilted kidney suspended by temporary suture, thus straightening the ureter. Gauze is seen placed in front of and behind the ureter. A third piece was placed between the two prior to parietal suturing.

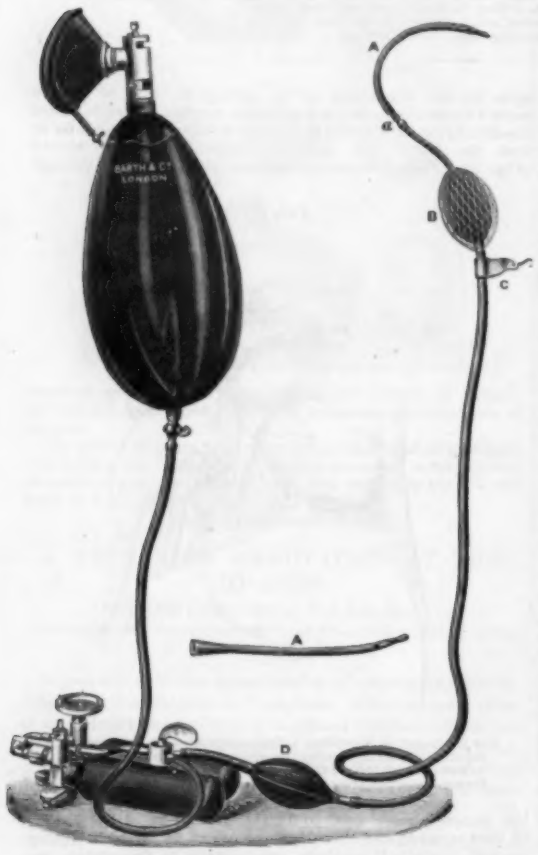
In three of the cases the kidney was apparently dislocated by definite injury. In most of them there were firm adhesions between the kidney and its outer fibro-fatty capsule.

Clifton, Bristol.

FURTHER NOTES ON THE USE OF THE NASO-PHARYNGEAL TUBE FOR PROLONGED NITROUS OXIDE ANÆSTHESIA.

BY HARVEY HILLIARD, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT INSTRUCTOR OF ANÆSTHETICS AT THE LONDON HOSPITAL AND THE ROYAL DENTAL HOSPITAL; LATE REGISTRAR IN CHARGE OF THE CEYLON MEDICAL COLLEGE, ETC.

ON May 7th, 1898, p. 1244, I published in THE LANCET a short paper on a method of prolonging nitrous oxide anæsthesia for dental operations by administering the gas through a naso-pharyngeal tube apparatus which I had devised. Further observations of this method were prevented by an absence of two years in Ceylon, which deprived me of the opportunity of bringing it more prominently to the notice of the profession, but since that time the more extended employment of the apparatus then described, in all kinds of cases in dental surgery, has convinced me that the use of ether, with all its objections, need practically never be resorted to, and this fact will assure the welcome of this method not only by dental surgeons and anæsthetists but in even greater measure by the public when it becomes more widely known, for all are agreed that N_2O is the most



perfect anæsthetic at our disposal. This, then, must be my excuse for referring again to the subject and it renders further apology needless.

The apparatus, which has been most carefully made to my design by Messrs. Barth and Co., consists of a two-way stopcock, the inlet tube of which screws into the union connecting the gas cylinders in such a manner that the whole stopcock lies between them and is thus out of the way; the tap of the stopcock is an elongated broad arm so that it can be easily turned by the foot. From the stopcock chamber lead two tubes of exit, and the tap is so arranged that when it is turned on to either of the two exit tubes the arm lies over that tube through which the gas will flow when liberated from the cylinders by means of the ordinary foot-key. The whole gas-supply can thus be entirely controlled by the administrator's foot. The exit tubes, like the other parts of the stopcock, are made of brass, are placed at an angle, and are an inch long, with bulbous ends so that the rubber tubing can be easily slipped over them; to the left hand one, which is of the same calibre as the union connecting the cylinders, is attached a Hewitt's gas-inhaling apparatus, to the other—the right-hand one—which is marked with the letter "N" and has a very fine calibre in order to reduce greatly the rapidity of the gas flow, is attached the other connexions of the nasal tube—viz., a small stout rubber "expansion bag" (vide diagram D) which is connected at one end with the stopcock exit, the other extremity being continued by tubing to a thinner and smaller rubber bag, B, also netted and which I have called the "pressure bag," as it shows the degree of pressure at which the gas is being supplied; it is fixed to the headpiece of the dental chair by a safety-pin hook, C. This bag is continued as a small rubber tube inclosed in a spiral of steel wire to prevent kinking, and terminates in a conical vulcanite nozzle *a*, fitting into the funnel-shaped extremity of the naso-pharyngeal tube proper, A. These tubes are made for me by Messrs. Stevens and Sons in three sizes—corresponding to numbers 7, 8, and 9 male English catheters—and consist of soft silk gum-elastic; they are six inches in length with the distal end made "*à boule*" and solid up to the orifice, which is situated half an inch from the point, the proximal end being expanded to receive the conical vulcanite attachment of the tubing.

Having occasionally experienced difficulty during a prolonged administration with the original apparatus, owing to the intermittent and irregular evaporation of the fluid nitrous oxide from the cylinders, which was not sufficiently compensated by the expansion bag provided to prevent it and which became in consequence over-distended, I found it necessary to make certain alterations in the construction of the apparatus, thereby eliminating these evils and making the administration more easy. To prevent too rapid a flow of gas the right-hand nozzle of the stopcock—to which the rest of the apparatus is attached—has been made with a very much finer orifice; this allows a much more delicate adjustment of the gas-supply and prevents those sudden escapes from the cylinders which not infrequently arise owing to a partial occlusion of the valve from frost suddenly giving way. In addition, also, the "expansion bag" is now made of half the thickness and double the capacity, which much more effectually regulates the flow by converting an intermittent stream into a continuous one; this bag is inclosed in a net of stout silk to prevent over-expansion, any tendency to which after maximum distension is at once seen in the pressure bag. This pressure bag is small and is made of thin rubber which easily stretches under slight pressure, it is inclosed in a loose net. Its object is to show, approximately, under what pressure the gas is being supplied and to act as a danger signal when this becomes too great, it also enhances the action of the expansion bag in regulating the flow of gas; for this reason it is placed well in view, next to the hook which fixes the apparatus to the headpiece of the dental chair; from it comes off the small rubber tube which terminates in a vulcanite nozzle made to fit into the naso-pharyngeal tube and which is protected from kinking or compression by a spiral coil of steel wire.

With these modifications I have been able to obtain much quieter and more satisfactory anæsthesia, without that tendency to over-dosage which was one of the disadvantages of the first apparatus. Now, too, since certain dental surgeons have become accustomed to its use they have undertaken more extensive operations, have worked with greater calmness and precision, and in consequence the periods of anæsthesia have been necessarily prolonged, the maximum hitherto being seven and a half minutes. The average anæsthesia reckoned from the last 100 consecutive cases of which I have made notes is 2·75 minutes; these cases were selected for treatment with the tube on account of the necessary operation being unusually extensive or of great difficulty.

Some objections have been raised to the employment of

the naso-pharyngeal tube on the following grounds: 1. That it is inadmissible in cases of nasal obstruction. As a theoretical objection this is valid enough, but practically it is very trivial, for in over 300 cases I have not met with a single case in which I could not rapidly pass my tube down one or other nostril; cases of complete nasal obstruction are extremely rare. 2. That the passage of the tube gives rise to hæmorrhage. In the 300 cases before-mentioned I have not in a single instance met with anything approaching troublesome bleeding; in six cases only among the last 100 there was slight oozing for a few minutes, and these cases suffered from hypertrophied and very vascular turbinal mucosa, which is not a common condition and is no contra-indication to the careful passage of a soft gum elastic tube no larger than a No. 9 catheter. 3. That the method cannot be used in cases of adenoids. When I had less experience of these cases I believed this to be true and therefore I did not employ my apparatus in children suffering from adenoids, but latterly, to meet objectors, I have been on the look-out for them and have not met with difficulty or unpleasant after-effects. A little blood must be expected, but as a rule the growths are soft and not very vascular and are easily pushed aside by the tube. One word of caution, however, is necessary with regard to adenoid cases—these are almost always in children; children at any time are rapidly anæsthetised with N_2O and show jactitation early when no air is administered with the gas, but, owing to the obstructed nasal respiration and the relatively small mouth, so little air is inspired in proportion to the anæsthetic, when administered continuously with the tube, that there is a danger of over-dosage. The greatest care and attention are therefore imperative in treating these cases and the gas should be allowed to flow into the pharynx as gently as possible; indeed, in all cases of impeded nasal respiration and in the anæmic the difficulty is not to keep the patient under but to give sufficiently little. 4. That the method is septic because the nasal tubes may convey disease germs from one case to another. This may occur in the hands of those ignorant of the elements of aseptic surgery, in spite of the fact that the tubes are easily sterilised and that furthermore their interior is never soiled, since the full stream of gas emerging from them effectually prevents any foreign matter entering; it is as easy to convey sepsis by an ordinary facepiece or a dental forceps.

I have here quoted the objections that have been raised by theorists and those who have had little or no experience of the method, but on the other hand, operators have never complained that the apparatus has impeded their manipulations or that their time has been taken up assisting the anæsthetist by having to use a mason's gag—a duty for which he is entirely responsible. Indeed, with this apparatus not only can the administrator easily perform all his legitimate duties but he can further aid the operator by helping to sponge out the mouth, for both hands are not occupied in managing the apparatus. Some other advantages of this apparatus over other methods for prolonging N_2O anæsthesia are that it leaves the mouth entirely unobstructed to the operator, whereas the nosepiece considerably hampers his manipulations in the front of the mouth by pressing upon the upper lip. The disadvantage of any form of mouth tube is obvious in this connexion. The tube is easily kept in place by the thumb of either hand while supporting the head, and the prop or mason's gag can be manipulated with the greatest ease without preventing the anæsthetist giving his assistance in sponging. With the nosepiece, on the other hand, it is sometimes a matter of difficulty to keep the apparatus in place; while one hand is occupied in doing so, the other is necessary to work the air valve. Again, with the nosepiece the success of the anæsthesia largely depends upon whether or not the patient is a persistent mouth-breather, whereas with the nasal tube the ordinary respiratory rhythm is not interfered with and the patient is bound to get the gas whether he breathes through the mouth or through the nose, since the gas is supplied in the naso-pharyngeal space, the stream being directed downwards upon the upper opening of the larynx.

In only one case have I been unable to maintain the anæsthesia sufficiently to keep the patient quiet for longer than one minute. In this case the patient was a very neurotic girl with a highly arched palate and very little naso-pharyngeal space. She had had gas on three previous occasions and each time she screamed and fought, the anæsthesia being too short to permit of the operation being accomplished. Anæsthesia was obtained with the tube, but having pushed the gas to its limit of safety, with resulting extreme cyanosis, I was obliged to stop the administration for a few moments, during which the patient recovered so quickly that before sufficient gas could again be administered she fought so much that I was forced to discontinue the administration altogether.

In the vast majority of cases one could easily give a lethal dose with this apparatus by closing the patient's nostrils with the fingers. I was obliged to resort to this practice in the case of an alcoholic patient who stated that on a previous occasion an unsuccessful attempt had been made to anæsthetise him; he had taken a glass of whisky on his way to the dentist, but with the tube and compression of the nares anæsthesia was easily maintained for one and half minutes; there was some rigidity throughout.

It is needless to multiply cases here; the average anæsthesia in 200 consecutive administrations is sufficient to show the capabilities of the method. They were selected on account of the operation being likely to prove unusually protracted. But even in an ordinary case it is an obvious advantage to the surgeon to be able to operate with deliberation, in the full confidence that there is no probability of the patient coming round before he has finished his manipulations. To the patient the advantage is two-fold: first, he is spared the necessity for either several distinct operations on several distinct days or the alternative of ether anæsthesia, and secondly, the risk of damage to the mouth from a hurried operation.

With regard to the administration itself, the gas is turned on to the ordinary apparatus and the administration is conducted in the usual way to the stage of light anæsthesia; with a full bag the facepiece is then momentarily removed and the tube is passed during an expiration; by so doing the patient inhales no air during this proceeding. It is important not to pass the tube until the patient is unconscious, for otherwise its presence in the nares causes lacrymation, phonation, or other signs of irritation and excitement. When the point of the tube is felt to impinge on the posterior pharyngeal wall the facepiece is re-applied over it, the two-way stopcock is turned so that the gas now flows through the nasal tube, and the administration is continued to full anæsthesia by means of both apparatus in order to see that everything is working properly. Before passage of the tube its point should be slightly bent downwards so that it is the more easily directed along the floor of the inferior meatus of the nose; unless this is done it is not difficult to pass it into the middle meatus, where obstruction is sure to be met with and bleeding is likely to arise. When its point is felt to impinge on the posterior pharyngeal wall the tube should be passed no further for fear of inflating the œsophagus and of causing swallowing movements or even vomiting.

The best and safest position in which to place the patient is sitting straight up in the chair with the head erect—i.e., tilted neither forwards nor backwards—in this posture there is no embarrassment of the respiration from stretching of the muscles of the neck and it is the best position for the surgeon when operating upon the lower jaw, while the head can always easily be tilted back after anæsthesia is complete for operations upon the upper jaw. What is far more important, however, is the fact that the bleeding caused by the operation does not gravitate backwards into the pharynx with the attendant risk of being inhaled and causing asphyxia, but it collects in the floor of the mouth whence it is removed easily with a sponge. The advantage of this posture is felt with those patients who salivate freely under gas and in whom troublesome coughing or retching is caused during induction by the saliva trickling backwards into the pharynx.

In cases requiring prolonged nitrous oxide anæsthesia it is more important than usual to have the bladder empty before the operation and the patient should abstain from food for at least three hours before the time fixed for operation, as subsequent nausea is less uncommon than after an ordinary administration. Loose clothing is imperative.

Since I first introduced this apparatus in 1898 I have been able in my own practice to make good the claim which I then made for it—viz., that it would render the employment of ether in dental surgery unnecessary; that owing to its small bulk and great portability it is more convenient and economical, as regards the quantity of N_2O used, than any other apparatus employed with the same object; and, finally, that it is free from risk of damage to the nose, naso-pharynx, and mouth, and is without danger to the patient.

Wilton-place, S.W.

ON THE TREATMENT OF INCIPIENT BRONCHO-PNEUMONIA IN INFANTS.

BY THEODORE ZANGGER, M.D.,

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INFANTILE pneumonia is a serious condition which deserves special attention, as in very young or ill-nourished children, but especially in cases debilitated by previous illness, it often proves fatal. But apart from the fact that the child's life is in jeopardy, in distinction from lobar pneumonia which generally terminates within a fortnight, broncho-pneumonia drags on for three, four, or six weeks and more. The continual fever has a detrimental effect on all the tissues, but especially on the heart, and the result is that convalescence is often complicated by anæmia, intractable dyspepsia, &c., and the danger of incomplete restitution of the tissue of the lung or incipient phthisis must not be underrated.

Any means to shorten the disease must be seriously considered by the physician. The question is: Have we any means at our command to arrest the disease at the outset or at least to shorten materially the duration of the pneumonia? I believe that I am in a position to reply in the affirmative. It is obvious that the evidence adduced must rest on a firm basis of indubitable clinical facts and that these must receive a careful and logical consideration. The treatment referred to is not medicinal from a pharmaceutist's point of view but belongs to the domain of hydro-therapeutics in a simple form, so as to be available even in country practice. I am anxious that none of my professional colleagues should disregard it merely on the ground of its simplicity or because he has already made use of similar but not identical measures of treatment. My method of treatment claims no special originality; it is the result of the theoretical and practical study of hydro-therapeutics extended over a number of years. My evidence is partly of a negative and partly of a positive kind. Let me start with the former.

Pneumonia is most often met with as a complication of two infantile diseases—viz., whooping-cough and measles. No one will contradict the statement that the mortality of these two diseases is greatly dependent on the question whether pneumonia ensues or can be warded off. Voit gives the mortality of whooping-cough at 25 per cent. in children under one year of age and at 4·8 per cent. in those between one year and five years. Let us compare with this statement the fact that 6·46 per cent. of 4181 cases of whooping-cough were complicated with capillary bronchitis (Szabó).[1] One can treat measles and whooping-cough exclusively on hydro-therapeutic principles. The result is decidedly better than if one treats the patient only medicinally and avoids making use of hydriatric procedures. But the best results are doubtless obtained by a combination of these two treatments and I in no wise wish to underrate proper drug treatment. The proper use of hydro-therapy in both these diseases tends to ward off complications. In about 120 cases of whooping-cough in children aged from three weeks upwards who have been under my care till they were cured I have not seen a single case of pneumonia develop, consequently the mortality was *nil*. Five patients had already more or less severe broncho-pneumonia when they entered on my treatment; they all recovered within six weeks.[2] The best results were obtained by combining hydro-therapeutic measures with medicinal treatment; in my cases hydrochlorate of quinine or cuchinine rendered me better service than bromoform.[3] My cases of measles, numbering about 150, I have not yet revised and published. Here also I have no fatal case to record, though of course I do not pretend that the mortality must be *nil* under a line of treatment which has given me such favourable results even partly under unfavourable hygienic surroundings and deficient nursing. Pneumonia as a complication I have only observed in half a dozen cases, one of which I will refer to in detail. The duration of the pneumonia never exceeded one week, nor that of the total convalescence three weeks. I will now give some short notes on cases observed within the last half-year. They refer partly to pneumonia checked at the onset and partly to the successful treatment of fully-developed pneumonia. To do more than mention my other cases thus treated would be a useless repetition.

CASE 1.—This patient was four years old and belonged to a poor family living under unhygienic conditions. She was taken ill with high fever on Jan. 21st, 1902. On the following day a rash rapidly developed and spread over the body. I diagnosed measles. From the outset the child seemed exceedingly ill, the rash was very intense, the conjunctivitis and pharyngitis were very severe, and the cough was exceedingly troublesome and was hardly relieved by wet packs for the chest and the bronchitis kettle kept beside the bed. On the 26th (the fifth day) the temperature, which had gone down, rose again to 103° F. and the cough continued to be very irritating. The child would scarcely move and was slightly somnolent; the number of heart beats was increased by one-third and the number of respirations also. There were signs of deficient breathing with small non-crepitant râles and dulness on percussion over the lower part of the right lung posteriorly. Incipient pneumonia was diagnosed and a "half bath" (*Halb-bad*) with friction was ordered and applied for four minutes. The temperature of the bath was 30° C. (86° F.) at first and was then decreased slowly to 24° C. (76° F.). It was to be repeated within 12 hours if the temperature remained over 103°. The next morning the child looked quite different, so that no second bath was ordered. She was brighter and more lively and asked for solid food which, however, was not given. Her temperature was 37·5° C. (99·5° F.) and remained normal. The lung symptoms persisted for a few days; diffuse bronchitis with small râles was recognisable, but these also rapidly disappeared on the application of cross packs (*Kreuz-binden*). No medicine was prescribed. Complete recovery ensued and the patient was pronounced quite well on the 30th.

CASE 2.—This patient was a delicate boy three years old, one of a working-class family of six. He fell ill with measles, as the mother reported, on Jan. 26th, 1902, and was treated by the parents themselves. As the fever continued they called me in on Feb. 1st. I found the spotted condition of skin seen after measles. The temperature varied from 101·6° to 102·2° F. There was pneumonic infiltration into the base of the left lung and the boy looked very ill. Baths were ordered as above. After three baths of from 86° to 76° of four minutes' duration, repeated only every 24 hours as the boy was weak, the fever abated, and the lung symptoms disappeared a few days afterwards. Recovery was complete on the 10th; a quinine tonic, however, was prescribed. I may here mention that the vin de Vial has among a score of other tonics given me excellent results in infantile diseases; during convalescence it may be taken in half teaspoonful to teaspoonful doses three times a day.

CASE 3.—This patient was aged five years. At the age of four and a half months in the course of protracted eczema of the face she developed diphtheria of the skin of the face and this rapidly spread to the conjunctiva where diphtheritic membranes formed. An antitoxin injection saved the cornea and probably also the life of the child. Since then she had been weakly, though a child of very healthy parents, and had been susceptible to cold and attacks of tonsillitis. She was taken ill on Jan. 2nd, 1902, with fever and a cough. As the temperature continued to run up from 101° to 104° F. I was called in on the 5th. The child had very severe and extensive bronchitis and capillary bronchitis, but so far no symptoms of infiltration of the lungs. Notwithstanding cool packs from under the arms to the ankles (*dreiviertel Packungen*) the state of the child became rapidly worse, the respiration rose to 40 per minute, and the pulse-rate to 160; there were dilatation of the right heart to the right of the sternum and evidence of commencing cyanosis associated with a temperature varying from 103·6° to 104·6°. Infiltration of the base of the right lung gave the clue to these symptoms, the diffuse bronchitis having increased in severity. The case threatened to be serious. The parents agreed to a tepid bath of from 28° to 26° C. (82° to 78° F.) which was applied for seven minutes with rubbing. The condition of the patient greatly improved within 12 hours; the temperature was 100°

[1] Thus a high percentage of all the deaths must be due to capillary bronchitis and pneumonia.

[2] I had not in those days begun to treat pneumonia with tepid baths and in the latter years I have not come across a case of whooping-cough complicated with pneumonia.

[3] Zur Therapie des Keuchhustens, Correspondenzblatt für Schweizer Aerzte, 1901, No. xii.

the next morning and declined to normal within 24 hours and without a second bath being given. The symptoms of infiltration of the lung were discernible for four days (crepitant râles and dull percussion note); the symptoms of bronchitis disappeared with marvellous rapidity under the application of cross packs. The patient's recovery was complete on the 18th and she was seen in full health in April.

CASE 4.—This patient was my own daughter, a healthy infant one year old. She was teething and had been suffering from slight cough for 10 days. She was taken ill with a rather severe attack of varicella on April 20th, 1902, with hundreds of vesicles all over the body, in the mouth, on the soft and hard palate, and on the conjunctivæ. The temperature from the 20th to the 22nd ranged from 100° to 101° F. On the 23rd she coughed more, seemed very ill, was very apathetic and drowsy, and took very little food. Baths of from 95° to 93° with bran had been given so far morning and night, each of from five to 10 minutes' duration. This is my usual treatment of varicella, the excessive irritation of the skin soon subsides under it. On the 24th the child's temperature rose to 103° and breathing was impeded, the cough was painful, and the pulse-rate was high. Professor O. Wyss, who was called in in consultation, diagnosed incipient pneumonia in the left lung, otherwise diffuse bronchitis. We agreed to give a bath of from 94° to 86° continuously for five minutes, Professor Wyss being averse to lower temperatures. On the 25th it was noted that the child had a very disturbed night. Symptoms of infiltration of the lung were clearly defined, there were crepitant râles over the left lung and dulness on percussion. The child was very weak, could scarcely sit up, coughed a great deal, and was very drowsy. The temperature rose to 103·6° in the evening. I gave the little patient a bath at from 86° to 79° continued for six minutes but without friction in order not to irritate the vesicles which were drying up or had dried up. The child had a good night with less cough; her temperature on the 26th was 99·6° in the morning and 98·6° in the evening, after which it continued normal. The child now sat up again and her pulse-rate and respiration rate were normal. On the 27th crepitant râles over the base of the left lung and dulness on percussion were very distinct. The child looked very pale but was lively. The bronchitis was improving. Baths of from 95° to 90° were resumed morning and night for from three to five minutes.[4] On the 28th the crepitant râles had disappeared, the percussion note was almost equal on both sides, there was very little bronchitis, the child's temperature was normal, and she had very little cough. Convalescence was prolonged owing to a very acute attack of follicular tonsillitis a week later, but she was quite well on May 18th.

I must mention that I have here only referred to cases where no medicines were given. I have done so in order to prove that the hydro-therapeutic procedures alone cut short the duration of the pneumonia. Even if these simple methods sufficed in such simple cases—and they could scarcely do better on any other treatment—yet drug treatment in combination with this "water cure" (*sit venia verbo*) will certainly be desirable in somewhat severe or prolonged cases. However, it is very much to be regretted that many physicians resort to the use of these baths only in the second or third week of pneumonia when the case is becoming more and more serious. Why use them only as a last resource, and *why not in the incipient stage?* Brand obtained his remarkably low mortality of 3·5 per cent. in the treatment of typhoid fever cases when they were treated with tepid baths from the onset.

Of course these baths can be varied in duration and temperature; packs have not given me as good results. The experienced hydro-therapeutist will vary the procedures according to the physique of the patient, the age, the severity of the symptoms, the complications, &c. For first trials I prefer recommending something simple and well defined, as a wrong technique may result in harm to the patient and also reflect detrimentally on the method of treatment and the medical practitioner as well. It is advisable for the latter personally to supervise the first bath at least; for feeble infants a stimulant is a necessary preliminary.

Let me resume. At the very first onset of pneumonic symptoms (high temperature, diminished resonance, small non-crepitant or crepitant râles, apathy, increased rates of heart beat and respiration) I give a bath of 86° F. for two minutes and then slowly reduce the temperature of the bath by adding cold water for from two to three minutes till a temperature of 76° is reached. I rub the body of the patient with a sponge or cloth or the hand to promote reaction of the skin and reduction of the body heat. The bath water need not, and in cases of feeble children should not, quite cover the body but the water can be sponged on the chest, the patient lying in the arms of an attendant. If definite pneumonic symptoms be present the bath may have to be repeated at intervals of from eight to 24 hours. The cross packs (*Kreuzbinden*) relieve the symptoms of bronchitis. I use them extensively in incipient phthisis, but they give excellent results, and naturally prompter ones, in uncomplicated simple bronchitis. They are applied in the following way. A linen bandage about one and a half inches broad for infants and five inches for adults, and from two to three yards long, is placed in cold water (from 54° to 66°), is well wrung out, and is applied to the chest thus—(1) beginning under the right axilla, passing over the left clavicle and round the chest back to the right axilla; (2) from here round the chest horizontally; (3) from the right axilla to the left and over the back and the left clavicle to the front (or left axilla). This bandage is covered in the same way with a thick single, or thin double, flannel bandage perhaps half an inch broader. This "pack" is applied at night and left till the morning; on removing it the chest must be well rubbed with a cold, wet towel and then rubbed dry.

I shall be glad if this method of treatment is favourably received and tried by my colleagues. These tepid baths are far superior to the chest packs so universally recommended. The latter harass the child, disturb its sleep if changed every one or two hours, trouble the attendants, and if continued day after day they tend to weaken the child, especially if not alternated with cold, wet friction. The results of the tepid bath, which have been best studied in cases of typhoid fever, do not merely rest on the reduction of body heat; it is not merely palliative but curative. The capillaries of the skin, that vast reservoir, are filled with blood; this temporarily relieves congested internal organs and improves their circulation; the action of the heart as well as that of the most important nerve centres (*imprimis* the vaso-motor centre) are stimulated by reflex action, defecation is promoted, and especially diuresis, thus causing the elimination of toxic substances.

Zürich.

[4] No cross packs were ordered in this case owing to the varicella as they would naturally macerate the skin and irritate the scabs and perhaps also promote secondary infection of these little ulcers.

SOME EXPERIMENTS ON THE PRECIPITINS.

BY ALDO CASTELLANI, M.D.

FLORENCE.

(*From the Bacteriological Department, Jenner Institute of Preventive Medicine.*)

WE are indebted to Bordet and to Wasserman for the first researches on the precipitins—a group of bodies which are every day acquiring greater importance on account of the many practical applications of which they are susceptible. Bordet observed that when a rabbit received several injections of cow's milk its blood acquired certain special properties. Thus the blood serum of the treated rabbit on addition to diluted milk produced a precipitate in the milk. This precipitate did not occur on the addition of a normal rabbit's blood to milk. Wasserman not only confirmed this observation but clearly demonstrated that in this respect every species of animal has a milk which acts in a specific manner. For instance, the serum of rabbits immunised with cow's milk produces the above reaction in fresh cow's milk, but does not do so in goat's milk or in human milk, &c. A fresh impulse was given to these researches by Bordet himself in his study of the precipitins of the blood. The French author, following up the work of the Italian observer Belfanti, has already shown that on injecting animals with the blood of another species the serum of the treated animals developed specific lysins and agglutinins for the erythrocytes of the blood of the species employed. And Bordet, continuing his experiments, observed that if animals were injected simply with the serum of another species specific

precipitins were likewise developed in the serum of the treated animals. For example, the blood of a rabbit which had been treated with the dog's serum produced a precipitate in, and only in, normal dog's serum. These researches were extended in various directions—e.g., by Wasserman, Uhlenhuth, Nuttall, and Schütze. And upon the results obtained a method was based for the special identification of human blood. For this purpose repeated doses of human serum were given to a rabbit. After a certain time it was found that the serum of the treated rabbits had acquired definite specific properties as regards human blood, and was capable of producing a precipitate not only in fresh human serum but likewise in very dilute serum solutions obtained by redissolving dried human blood-stains several weeks old. The serum of the rabbits, however, did not produce a precipitate in any other serum, with the one exception of the monkey's, in which a slight positive reaction was obtained. This method has already been applied in medico-legal investigations with good results (Ferrai, Ogier, Stockis). Another interesting fact may be noted here—viz, that the blood of animals immunised with human serum causes also a precipitate in albuminous urines (Stern) as well as in ascitic and hydrocele fluid (Schütze, Dieudonné).

Farmen likewise has applied this biological test to semen. Rabbits injected with the sperma of different species of animals developed specific precipitins in their blood. Thus, the serum of a rabbit which had been immunised with dog-sperma produced a precipitate in a salt emulsion of dog sperma, but not in emulsions of sperma from other sources. Schütze has recently published[1] an important paper on the differentiation of different albuminoid preparations by means of similar biological tests; and closely connected with the above observations are the interesting researches of Kraus upon the specific precipitates that occur in *filtered* cultures of micro-organisms on the addition of the serum of animals previously immunised with bacterial cultures. Kraus showed that the serum of a typhoid-immunised animal induced a precipitate in a clear filtrate of a culture of the typhoid bacillus, but that it was impossible to obtain a precipitate by adding the serum of animals immunised with other bacteria.

The first experiments which I have made were with reference to the specific precipitins which might be obtained by immunising animals with different kinds of proteid preparations, and they were undertaken with the view of obtaining some preliminary data for the special research I had in view. These experiments were carried out with two albuminoid preparations known commercially as somatose and "roborat," the latter a vegetable proteid derivative.

A strong solution of somatose in physiological salt solution was used for injection into rabbits. A subcutaneous injection of five cubic centimetres was made and this was repeated several times. Injections of "roborat" were made in a similar fashion. The "roborat" was previously dissolved in hot water and filtered before use. The rabbits did not suffer in any way from the injection of these preparations nor did they lose weight. At the end of two weeks' treatment the animals which had received "roborat" gave evidence of a distinct formation of precipitins in their blood. A few drops of their serum produced a distinct precipitate in a fresh solution of "roborat." The reaction was best obtained by keeping the tubes for some hours at blood heat. The reaction, on the other hand, did not occur on adding the serum of the treated animal to a solution of somatose. As regards the rabbits which had been treated with somatose the formation of a specific precipitin was not so clearly marked, but still, although after a longer period of time, it was possible to produce a slight precipitate with their serum in a solution of somatose, whilst none occurred in a solution of "roborat." These experiments demonstrate once more the possibility of obtaining specific biological, in contradiction to purely chemical, tests for proteid bodies whether these be of animal or vegetable origin. Many valuable extensions might and are being made in this direction.

The subsequent experiments which I made were with special reference to the precipitins produced by the serum of animals immunised with living cultures of bacteria. These experiments were performed with the bacillus typhosus, staphylococcus pyogenes aureus, and two varieties of bacillus coli, designated by the numbers I. and II. A series of rabbits were immunised by the subcutaneous inoculation of living broth cultures of the above organisms. The blood of the treated animals very quickly acquired marked agglutinating properties with regard to the respective organisms employed. I may point out in this connexion that the typhoid serum, in addition to agglutinating very markedly the bacillus typhosus in a dilution of 1 in 10,000, also agglutinated to a certain degree (1 in 200) the Bacillus coli II., although it did not agglutinate the Colon bacillus, strain I. The possibility of some typhoid sera agglutinating certain strains of the colon bacillus has already been experimentally demonstrated by Iatta.

The following are the details of some of my experiments:—

EXPERIMENT I.—A broth culture of typhoid four weeks old was passed through a Berkefeld filter. The sterility of the filtrate was controlled by microscopic examination and by incubation of the filtrate for 24 hours at blood heat. To each of three test tubes five cubic centimetres of the clear filtrate were added and to each of these the serum of a rabbit immunised with typhoid bacilli was added in the following proportions: one cubic centimetre, half a cubic centimetre, and one-twentieth of a cubic centimetre. The tubes were then placed for 12 hours in the incubator at blood heat. At the end of that period the first and second tubes contained a marked precipitate whilst the third tube showed a very slight one.

EXPERIMENT II.—The same fluid was tested as in Experiment I.—viz., a filtered culture of the typhoid organism. To a series of test-tubes containing five cubic centimetres of the filtrate were added two cubic centimetres, one cubic centimetre, half a cubic centimetre, and one-twentieth of a cubic centimetre of serum taken from a rabbit immunised with Bacillus coli I. To a second series of tubes, containing the typhoid filtrate, similar quantities of serum obtained from a rabbit immunised with Bacillus coli II. were added. No precipitate occurred in any of the tubes after 12 hours' incubation at blood heat.

EXPERIMENT III.—Four weeks' old broth cultures of the first strain of the colon bacillus were filtered and added to three series of test tubes. To the first series were added varying quantities (one cubic centimetre to one-twentieth of a cubic centimetre) of the first colon serum, to the second graduated quantities of the second colon serum, and to the third typhoid serum. The result was that only the first series gave precipitates.

EXPERIMENT IV.—The filtrate from an old broth culture of Colon bacillus II. was added to the three test tubes, to each of which was likewise added half a cubic centimetre of Colon serum II., Colon serum I., and typhoid serum respectively. After 12 hours at blood heat the first tube contained a marked precipitate, the second was quite clear, and the third (typhoid serum) contained a very slight precipitate. As I have already remarked, the typhoid serum had also a certain agglutinating power on Colon bacillus II. The serum of Colon bacillus I., on the other hand, had no agglutinating power on Colon bacillus II.

EXPERIMENT V.—To the filtrate of an old broth culture of staphylococcus pyogenes aureus were added varying quantities of the serum of a rabbit which had been immunised with living broth cultures of the same organism. The addition of one-tenth of a cubic centimetre of the staphylococcus serum was sufficient to produce a distinct precipitate in the filtered culture of the same organism, but the results were negative with colon and typhoid serum.

EXPERIMENT VI.—A rabbit was simultaneously immunised with the typhoid bacillus and with the colon bacillus by injecting subcutaneously living broth cultures of the typhoid and the colon bacillus. Two weeks subsequently the blood showed very strong agglutinating properties on both of these organisms, whilst at the same time the formation of agglutinins had been accompanied by the production of precipitins. The serum produced not only an agglutination but a precipitation in filtered cultures of the typhoid and of the colon bacillus.

The above experiments were typical of the results obtained and are confirmatory of the observations made by Kraus, and, in my opinion, they point to the existence of a certain correlation between the agglutinins and precipitins. This correlation appears to me to be evident from the following facts. The serum of an animal, for instance, which has been immunised with the typhoid bacillus develops along with its acquired power of agglutination the property of producing a precipitate in the filtrate from typhoid cultures.

[1] Zeitschrift für Hygiene, vol. xxxviii.

The agglutination is a specific phenomenon, but this specificity is only relative inasmuch as a typhoid serum may likewise exhibit a certain degree of agglutinating power on some strains of the colon organism. Similarly I have found that the precipitins are not absolutely specific. A typhoid serum which agglutinates a certain strain of the colon bacillus will at the same time produce a slight precipitate in a filtered culture of the same colon organism. Finally, I have observed that if an animal be immunised with different bacteria at the same time a poly-agglutinating serum results, in the same way that a serum results which will produce a precipitate in filtered cultures of the several organisms used for immunisation. This had already been observed by Wolff as regards a poly-agglutinating serum.

I next proceeded to study the precipitins which might be produced by the serum of animals that had been treated with *filtered* broth cultures of bacteria.

Kraus, experimenting in this direction with the diphtheria bacillus, came to entirely negative results, and was led to the conclusion that there is no formation of precipitins in the serum of animals treated with germ-free filtered cultures. I may say at once that experimenting like Kraus with the diphtheria bacillus I came to a similar conclusion. But the results are of a different character if the experiments are extended to other bacteria. For example, cultures of the typhoid bacillus, colon bacillus, and staphylococcus aureus were freed from the organisms by filtration through a Berkefeld filter and the filtrates were injected into rabbits. In the blood of all the treated animals it was easy, after a certain time, to detect the formation of specific precipitins, as will be seen from the following experiments.

EXPERIMENT I.—The filtrate from an *old* broth culture of the typhoid bacillus was added to three series of test tubes. To the first series were added varying quantities of the serum of a rabbit (from one cubic centimetre to one-twentieth of a cubic centimetre) which had been treated with filtered cultures of the typhoid bacillus. To the second series were added the same quantities of serum taken from an animal treated with filtrates of cultures of the colon bacillus, and to the third the serum of a rabbit which had received filtered cultures of the staphylococcus aureus. After being kept for 20 hours at blood heat two tubes of the first series contained distinct precipitates—viz., those to which one cubic centimetre and half a cubic centimetre of the typhoid serum had been added. The test tubes in the second and third series, on the other hand, remained perfectly clear.

EXPERIMENT II.—An *old* broth culture of staphylococcus aureus was passed through a Berkefeld filter, and the filtrate added from a rabbit treated with staphylococcus filtrate, to a second half a cubic centimetre of serum from a rabbit treated with typhoid filtrate, and to a third half a cubic centimetre of serum from an animal treated with colon filtrate. At the end of 12 hours a precipitate occurred in the first tube and not in the other.

EXPERIMENT III.—To the filtrate of diphtheria cultures I added in varying quantities the serum of a horse immunised in the usual manner with diphtheria toxin. I was, however, not able to detect any precipitin, although the tubes were kept at blood heat for 48 hours.

The above observations show that on immunising animals with bacterial free filtrates of cultures of the typhoid bacillus, colon bacillus, and staphylococcus aureus it is possible to induce a formation of precipitins in their blood. The results were negative in the case of filtered cultures of the diphtheria bacillus. This fact, is in my opinion, an additional argument in favour of the intimate relation existing between the agglutinins and precipitins. For if we treat an animal with filtered diphtheria cultures we do not induce in its blood a formation of agglutinins (or only very slightly), but if we treat an animal, e.g., with filtered typhoid cultures, the blood will acquire a marked agglutinating power, though not so strong as if we had carried out the immunisation of the animal with unfiltered cultures.

A final series of experiments was made in order to determine whether precipitins were formed in the serum of animals that had been treated with *dialysed* cultures of bacteria. For this purpose typhoid cultures were taken (45 days old) and dialysed by means of a Martin gelatin filter. The dialysates were injected several times into two rabbits, five cubic centimetres at a time being inoculated subcutaneously. 12 days after the first injection the agglutinating power of the blood of the animals was tested and it was found that it had acquired distinct agglutinating properties, a distinct agglutination of typhoid bacilli being produced by a dilution of 1 in 500. This confirms the observation made by Macfadyen that it is possible to induce a formation of agglutinins by treating animals with dialysed cultures. I tested the blood at the same time for the formation of precipitates, using as test material old filtered cultures of the typhoid organism. The results were positive. The serum of the animals treated with the dialysed cultures produced in doses of 0·5 and 0·25 cubic centimetre a precipitate in the filtered typhoid broth. The serum did not produce any precipitate in filtered cultures of staphylococcus aureus or the colon bacillus. My experiments, therefore, lead me to the conclusion that it is possible to induce the formation of precipitins as well as agglutinins by injecting dialysed cultures. My experiments lay no claim to completeness and it is my intention to continue and to expand them. Thus it would be interesting to test whether the serum of typhoid fever patients causes a precipitate in filtered typhoid cultures.

The experiments which I have made point to the following conclusions: 1. The blood serum of animals treated with different preparations of natural albumins contains specific precipitins for the albumins. 2. The blood serum of animals treated with unfiltered bacterial cultures produces a precipitate in filtered cultures of the organisms in question. 3. The serum of animals treated with *filtered* cultures of bacteria likewise develops specific precipitins which produce precipitates in the filtered cultures of the same bacteria. 4. An exception was in the case of diphtheria cultures, the injection of which did not lead in my hands to the production of precipitins. 5. Animals which are treated with dialysed typhoid cultures develop the specific precipitins in their serum. 6. There is a close connexion between the agglutinins and the precipitins.

I am greatly indebted to Dr. Allan Macfadyen for the help afforded me in the course of the experiments, as well as for the performance of the necessary inoculations.

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SOME PRACTICAL POINTS IN THE TREATMENT OF CONGENITAL TORTICOLLIS.

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THE main facts known about congenital torticollis have been described by many writers and therefore I propose to limit my remarks to a few practical points in the conduct of these cases. These points may be summarised as follows. 1. Division of the contracted sterno-cleido-mastoid muscle is usually required to cure the deformity. The anterior fibres of the trapezius and also deep bands of cervical fascia are also sometimes involved. 2. A retention apparatus is not usually necessary in the treatment of uncomplicated congenital torticollis, either before operation or as a means of retaining the head in a straight position after the division of a contracted muscle. 3. In operating we have to decide between an open wound and a subcutaneous section. The open wound (assuming that strict antiseptic precautions are taken) is desirable in the majority

of cases and certainly it ought to be made when the clavicular attachment of the muscle has to be divided. When the sternal origin alone requires division and the contraction is sufficiently severe to cause the tendon to be raised away from the deeper tissues—then the subcutaneous operation may be performed as a safe procedure. It is impossible to divide the clavicular attachments of the muscle subcutaneously without risk of wounding some important structure, notably a vein. 4. A vertical incision between the two attachments is useful in operating, first because it is less likely to leave a noticeable scar than a transverse cut and, secondly, because we can through this one opening divide both the clavicular and sternal portions of the muscle. When other bands of contraction occur they must be dealt with according to their peculiarities. 5. The incision should be about one and three-quarter inches in length from the level of the clavicle upwards and should expose the edge of the clavicular portion of the sterno-mastoid. A director should then be worked closely under the muscle just above the clavicle until it projects at the outer border of the muscle. The vertical wound will allow the skin to be drawn to the outer side sufficiently to permit of the escape of the end of the director. Then the muscle can be carefully cut through from without downwards, the surgeon observing as he proceeds that no important vein, nerve, or artery is involved. The same method can then be applied to the sternal attachment. Oozing of blood having ceased the wound must be stitched up and treated in the ordinary manner, a large pad of gamgee tissue or other soft dressing being applied to effect gentle pressure. The dressing should be fixed with adhesive strapping and a bandage. The patient's head should then be placed in a perfectly straight position or even a little bent towards the side opposite to the affected muscle and fixed in position by sandbags placed on each side of the head, the patient lying supine. No other method of retention is necessary unless the child should be very unmanageable. The divided muscle usually reunites rapidly and about from a week to 10 days in bed in the one position suffices usually to allow a fairly firm union to take place. After this it is generally permissible for the patient to sit up in bed and in the course of a few days to get up and move about cautiously. At the end of three weeks the patient should have recovered from the operation. 6. The subsequent treatment depends upon the condition of the patient previously to operation. In the case of a young child, say five or six years of age or even older, it is probable that the structural changes in the spine from the previous malposition of the head will not be severe and that when the contraction is relieved the patient will have little or no difficulty in keeping the head straight. If there should be an inclination on the part of the patient to drop the head towards its former malposition a course of massage and special exercises will suffice to correct this tendency. In proportion to the length of time which has elapsed before operation has been performed, or, in other words, in proportion to the age of the individual and also in proportion to the degree of the contraction, so will be the tendency to deformity of the neck. It is in the older patients, and especially in adults, that the spine and other structures will have changed their shape, so that a very decided inclination for the head to assume the old position will exist. But even in these cases massage and exercises will generally suffice in a few weeks or months to overcome the evil. We may, of course, meet with severe lateral curvature as a result of the deformity and then such a complication will require to be separately dealt with, but these cases are comparatively rare and hardly come under consideration in a paper dealing with uncomplicated congenital torticollis. Of course, patients ought never to be allowed to continue to adult age unrelieved but such cases certainly exist. It is probable that a fear of bad results from operation—a fear which with antiseptic surgery and care in operation ought not to be entertained—explains the fact that this affection is sometimes allowed to continue beyond childhood. In some cases other muscles besides the sterno-mastoid are contracted, but these do not come into the category of uncomplicated congenital torticollis. Nor, I may as well add, am I considering those instances of contraction due to tonic spasm caused by caries of the cervical vertebræ and other causes.

CASE 1.—The patient, a girl, aged three years and three months, was sent to me by Dr. F. A. Purcell on June 11th, 1895. The right sterno-mastoid was contracted, drawing the head down on that side, as shown in Fig. 1. It is possible that in this case the contraction was due to injury to the muscle from the force which was necessarily employed in delivering the head at birth, the case being a breech-presentation although, of course, this may not be the explanation of the contraction. In the treatment of the torticollis it was necessary to divide both the sternal and clavicular attachments of the contracted muscle. The head was immediately placed in a straight position and perfect union took place rapidly, so that in three weeks the child was well and about again. Four months after operation the head remained perfectly straight and the father took the second photograph.

FIG. 1.

The patient in Case 1. The lines show the amount of deformity, one line being at the level of the shoulders and the other at the level of the lobes of the ears.

FIG. 2.

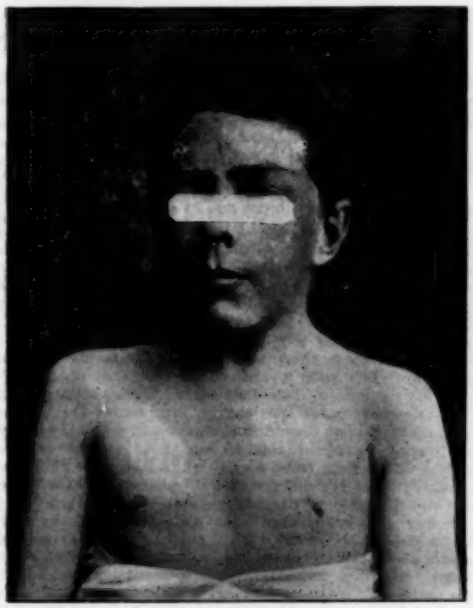
The same patient four months after operation.

CASE 2.—The patient, a boy, aged five and a half years, was sent to me by Mr. J. Keay of Stockport in April, 1896. This patient is shown in Fig. 3 and it will be observed that

FIG. 3

The patient in Case 2 before operation in April, 1896. The whole trunk was curved in accordance with the bend in the neck. The lines show the amount of distortion of the head.

FIG. 4.



The same patient in April, 1901, five years after operation, showing that he was absolutely cured of the deformity and remained sound.

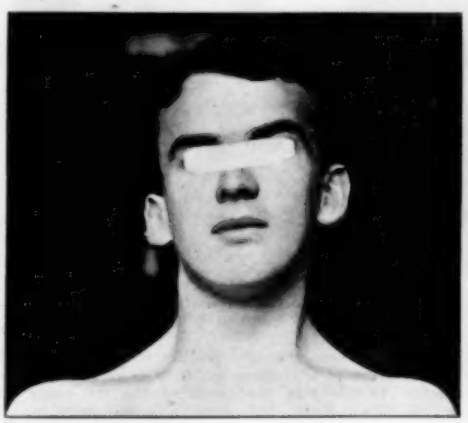
the whole body is curved in correspondence with the deflection of the head—that is to say, from the vertex of the head to the pelvis is one continuous curve. In this instance the spine had become involved as a result of the torticollis and I found it necessary to use an apparatus for a time for the spine itself. I therefore took the opportunity to extend this apparatus to the head. Had the spine not been thus affected

FIG. 5.

The patient in Case 3 before operation. The lines show the deflected position of the head.

I should not have used any apparatus and from more recent experience I believe that the case would have done very well without the head-piece. On April 10th, 1896, I divided both the attachments of the sterno-mastoid. The patient made a rapid recovery and a few weeks after operation the head was retained in a perfectly straight position. I had the opportunity of seeing this patient in April, 1901, five

FIG. 6.



The same patient a few weeks after operation.

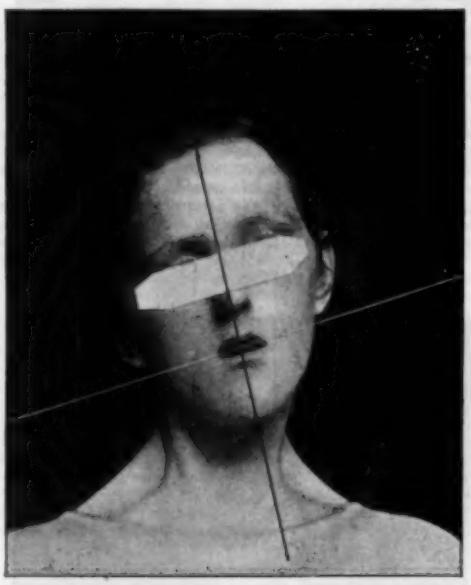
years after operation, and I found the cure to be absolutely perfect and I therefore took the photograph which is represented in Fig. 4.

CASE 3.—The next case is instructive as showing the effect of torticollis being allowed to continue without treatment until adult age. In such instances it is almost certain that structural changes will have occurred in the spine and other

parts requiring longer after-treatment, but yet, even under such circumstances, it is not necessary, as a rule, to use apparatus. The patient, who was 21 years of age, was sent to me by Dr. M. H. Gardiner of Richmond, on Dec. 8th, 1900. The right sterno-mastoid was contracted as shown in Fig. 5. There was also some contraction of the left sterno-mastoid, which seemed to be of a temporary nature and had probably been brought about by the continued efforts of the patient to counteract the contraction on the right side. Operation was necessary on both attachments of the right sterno-mastoid and the result was perfectly satisfactory. In a few weeks after operation the patient was able to hold his head almost perfectly straight as shown in Fig. 6. There was, however, a great tendency for the head to drop to the former position in consequence of the altered shape of the cervical vertebræ and other tissue changes, and a course of exercises and massage was necessary to overcome this. The patient made rapid improvement, so that at the end of three months he had complete control over the head. I considered, however, that it would take several more months before he could safely give up the exercises. After the first three weeks he had been able to carry out these exercises by himself. At the age of 14 years this patient wished to enter the navy, but he was refused in consequence of his wry-neck.

CASE 4.—A girl, aged 14 years, was sent to me on March 5th, 1901, by Miss Rigby, a member of the Ling Association, who had been treating her with exercises for curvature of the spine. As seen in Fig. 7, the contraction was chiefly on the right side, but partly also on the left.

FIG. 7.



The patient in Case 4. Before operation the lines show the deflected position of the head.

It had been thought that the position of the head was due to the curvature of the spine, but it is more probable that the spine trouble was the result of the wry-neck. By exercises Miss Rigby had been able to overcome the curvatures in the dorsal and lumbar regions, but she failed to produce any effect on the cervical curve. This failure was not surprising as the neck was kept bent by the contracted muscle. Both attachments of the sterno-mastoid had to be divided and the patient made a good recovery (Fig. 8). It was, of course, necessary in this case to carry out a course of massage and exercises to overcome the curvature in the cervical part of the spine and the consequent tendency to drop the head towards the old position.

The whole subject of torticollis is a large one and I have purposely limited the above remarks to the simplest form which presents itself. Those surgeons who wish to study torticollis in all its forms cannot do better than consult the work of Dr. P. Redard, published in Paris in 1898, which is not only complete in itself but which gives a long list of the bibliography of the subject.

FIG. 8.

The same patient three weeks after operation.

Queen Anne-street, W.

BRIEF NOTES ON THREE CASES OF AUTO-INTOXICATION: ONE FATAL.

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IN Grenada and the Grenadines, where corn and peas form chiefly the staple article of food of the people, constipation is a very troublesome condition among them, so also it is with the inhabitants of the other islands where the same diet prevails. Various fruits as well which the poor indulge in, such for example as the mango, the sugar apple, and the apricot (mammy apple), are all fibrous and as such are calculated to render the bowels most obstinately constipated. It is well known that whereas the well-to-do indulge in foods that are much too rich the diets of the poorer classes are not sufficiently stimulating. Be that as it may, cases of obstinate constipation frequently present themselves, and it is a very difficult matter to persuade such patients that their diet should be altered for a more stimulating one; indeed, in very many instances there is no alternative, seeing that the parties are too poor to afford a frequent change of diet. My attention has for some years been drawn to a series of cases presenting symptoms not unlike those following upon a condition of uræmic poisoning and it has always been remarkable to me that there is not the slightest sign indicative of any Bright's disease. The urine has usually been free from the slightest trace of albumin or sugar and the patients, except for a state of stupor gradually deepening into coma, are otherwise physically healthy. Malaria cannot account for this condition, for usually in malarial coma there is always to be found a history of intermittent fever, and, moreover, the treatment adopted in the cases under discussion is sufficient to do away with any idea of malarial infection. Alcoholism is also excluded by virtue of the history and the state of the patient when he comes under observation. The only other state which might be allied to this condition is that of hysterical coma, which, in

my opinion, may also originate in a loaded bowel by the absorption of injurious toxins, but whereas hysteria commonly affects women alone this process of auto-intoxication affects both men and women equally. In fact, there is nothing that I see which would cause this state of stupor in patients otherwise healthy except the absorption of injurious substances consequent upon a loaded bowel, and in defence of my contention I would point out that the headache which is a usual result of constipation is very suggestive of poisoning. The treatment, moreover, is so simple and successful as to admit of no doubt of the origin of the trouble. This consists simply of a large enema of soap-and-water with two tablespoonfuls of castor oil added. The two following cases indicate the clinical symptoms of this condition.

CASE 1.—A woman was admitted to hospital in an apparently comatose state. She was well nourished and between 35 and 40 years of age. She was quite unconscious. Her face was perspiring, the pupils reacted to light and to accommodation, and the breathing was quick and shallow. The lungs and heart were normal. The pulse was full and regular, counting 96 in the minute, and the temperature was normal. The urine, which was drawn by catheter, was free from albumin. The history was that she was quite well but was seen to drop as if shot. A large enema of soap-and-water with an ounce of castor oil was administered and half an hour later she passed a very large motion, when she almost immediately regained consciousness. She was discharged well.

CASE 2.—I was called to see a young man who was taken suddenly ill and who was said to be dying. I found him unconscious but he could be roused on shaking him, when he would open his eyes, mumble a few unintelligible words, and subside again into an unconscious state. He had not been drinking. His heart and lungs were free from disease and he was not a fever subject, but there was a distinct history of constipation. There was no albumin or sugar in his urine which was subsequently examined and he was not subject to fits. I gave him five grains of calomel by the mouth and ordered the usual enema of soap-and-water and oil, which according to the attendants worked him well. On the following day he was up and about.

Such is the usual history of these cases, but quite recently a case of sudden death in a child, six years of age, was reported to me and I made a post-mortem examination the result of which suggested the writing of this note. On careful inquiry no history of any disease could be obtained from the parents which would be likely to bring about the sudden death of the child, only the mother stated that her bowels were "hard to go off." She was playing about the yard when she dropped down and almost immediately expired. The necropsy was performed in the mortuary of the St. Lucia District Hospital 17 hours after death. The body was found to be that of a well-shaped, well-nourished female child. Rigor mortis had passed off in the upper part of the body but was still present in the lower extremities. The larynx and trachea were not obstructed and appeared to be quite normal. The lungs and pleuræ were normal. There was a little less than a tablespoonful of serous fluid in the pericardial sac; there was no evidence of pericarditis. The heart had stopped in systole. The left ventricle contained a little ante-mortem clot which extended to about half an inch up the aorta. The mitral and aortic valves were perfectly smooth and normal. The right ventricle was quite empty. The tricuspid and pulmonary valves were normal. The œsophagus and stomach were normal and the latter contained about one ounce of a white grumous fluid; its mucous membrane appeared to be normal. The small intestines were normal and contained no worms. The appendix was normal; its position was upwards and backwards. The ascending colon and transverse colon were empty. The descending colon from the splenic flexure to the sigmoid was a bag of fæces, the contents being more or less a cast of semi-solid fæces, with here and there very hard fæcal masses forming lumps of about the size of a shilling. There was no sign of obstruction or contraction or any thickening whatever. The sigmoid and rectum appeared to be perfectly normal. There was only slight distension of the descending colon. The liver and the gall-bladder were normal, so were the kidneys, spleen, and pancreas, the bladder, and the uterus and its appendages. As regards the brain the calvarium was somewhat adherent to the dura mater; the pia arachnoid seemed to be normal. The lateral ventricles were normal and contained a little fluid but of no unusual quantity. The optic thalami, the caudate and lenticular nuclei, and the internal capsule seemed to be perfectly normal, so also did the pons, the cerebellum, and the medulla. The fourth ventricle was also examined and appeared to be normal. In fine, there seemed to be nothing, with the exception of the fæcal distension of the descending colon, to account for the sudden death of the child who appeared perfectly well up to the time of her death. Had she lived she would undoubtedly have suffered sooner or later from intestinal obstruction from fæcal retention. I have therefore come to the conclusion that the absorption of poisonous toxins from the bowel, which would in an adult have given rise to a suspension of consciousness until relieved by treatment, caused sudden death in the case of this child, whose vitality presumably was less able to withstand such poisons.

St. Lucia.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

BETHNAL GREEN INFIRMARY, N.E.

A CASE OF CHOLESTEATOMA OF THE FOURTH VENTRICLE.

(Under the care of Dr. BEATRICE KNOWLES and Mr. WILLIAM HALL PEILE, assistant medical officers.)

THE patient, a well-developed woman, aged 30 years, came under observation on Sept. 19th, 1901, complaining of pains in the back of the head "like knives," a feeling of weight on the top of the head, a sensation of pins and needles in the hands and feet, and of inability to walk. She had enjoyed good health until two years previously, when she was noticed to stagger on walking; the difficulty in locomotion increased steadily, and of late she had been constantly falling down. The pains in the head and other subjective sensations were of only three weeks' duration. The patient was married; she had had six children and one miscarriage. No history of syphilis, otitis, injury to the head, or alcohol could be obtained.

On admission the patient was a well-nourished woman, of medium height, with a sallow complexion. Her mental state was dull and she was slow in answering questions but did so accurately. The speech was thick and indistinct, resembling that of a general paralytic. This the patient noticed herself and she volunteered the statement that her tongue and mouth felt swollen; the tongue, which was furred, was protruded in the middle line and was distinctly tremulous; the breath was offensive and had very markedly that peculiar odour which is often present in cases of tumor cerebri. The gait was a staggering one, with the feet wide apart and with the arms extended to preserve the balance. There was a constant tendency to fall to the left and Romberg's symptom was well marked. There was good muscular power in both lower limbs and no tenderness on pressure, rigidity, wasting of muscles, or anæsthesia could be detected. The knee-jerks were present on both sides and were exaggerated; ankle clonus could not be obtained. In the upper limbs the only thing noted amiss was a slight impairment of the muscular sense. As regards the head, there was slight but distinct tenderness to percussion and pressure all over the occipital region, but it was not more marked on the one side than on the other; there was no facial or ocular palsy or nystagmus. The pupils were equal and moderately dilated and they reacted readily to light and accommodation. It is to be regretted that the ophthalmoscope was not used at once, as the patient's sudden death prevented this being done subsequently. The bladder acted normally; the bowels were obstinately constipated, resisting calomel, salines, croton oil, and enemata, all of which were used freely.

There is not much to be said as regards the progress of the case. The patient lay quietly in bed and slept well at night; she complained of moderately severe occipital headache. There was no vomiting; the appetite was good

and the temperature varied between 97·4° and 99·2° F. The pulse was normal. On Sept. 24th, five days after admission, she became restless, taking off the bedclothes and attempting to get out of bed. At intervals she would lie quietly on her left side curled up in the bed; towards evening the pulse became very rapid, respiration failed rather suddenly, and she died, remaining conscious almost to the last.

Necropsy.—At the post-mortem examination on removing the skull-cap a very congested state of the cortical veins was noted. When the brain was being removed a puncture was accidentally made in the floor of the third ventricle, out of which more than half-a-pint of cerebro-spinal fluid spurted with considerable force. On the removal of the brain a portion of the tumour was seen lying in the space between the cerebellum and pons. The tumour, which was irregularly spheroidal, had a diameter of about two inches and was roughly of the size of a Tangerine orange. The surface was very irregular and on it were numerous pearly outgrowths varying in size from that of a pin's head to that of a pea. The whole tumour had a remarkable pearly lustre which was especially marked in the smaller outgrowths. Before dissection it appeared to be growing in the space between the medulla and the cerebellum; the medulla was pushed forwards and to the right and considerably flattened; the tumour also pressed upon both lobes of the cerebellum, especially the left, and upon the vermis which was flattened out. On cutting through the inferior vermis of the cerebellum the full size of the tumour became evident and it was seen to be lying in a greatly distended fourth ventricle. On moving the tumour the floor of the fourth ventricle could be seen and at its extremity the orifice of the Sylvian iter to which the tumour was closely applied. In order to preserve the specimen no further dissection was done. The other organs of the body appeared to be quite healthy.

Remarks by Dr. KNOWLES and Mr. PEILE.—Cholesteatoma, or pearly tumour, occurring within the cranium is an exceedingly rare condition, as is proved by the fact that there was no example of it in the museum of the Royal College of Surgeons of England. In most of the text-books on medicine it is merely mentioned as a curiosity in company with psammoma. Cholesteatomata are found in three situations—(1) in pre-existing hollow spaces lined with epithelium, such as the mastoid cells of the temporal bone; (2) growing from the leptomeninges, the pia mater, or the trabeculæ of the arachnoid; and (3), as in this case, in the central canal of the cerebro-spinal system, where, according to Thoma, they arise as autonomous new formations of endothelial cells. "These tumours are waxy or mother-of-pearl-like masses consisting of shed epidermic squames and cholesterin crystals. The epidermic squames are arranged in irregularly concentric laminæ and accordingly the whole mass has a rounded shape. They are sometimes primary multiple growths and are then found as a number of pearl-like tumours in the arachnoid; in other cases the originally separated pearls become united and form irregular masses" (Thoma).

A diagnosis of slowly growing intracranial tumour was made *intra vitam* and it was thought that the tumour was involving the cerebellum and probably the left lobe. The true nature of the tumour was, of course, not discovered till the necropsy, when its remarkable appearance removed all doubt. Gumma and tubercle were both suggested; malignant disease was excluded by the long duration of symptoms. It is remarkable that so large a tumour situated in such a position should have caused so little motor and sensory disturbance and that the bulbar symptoms should have been confined to a mere thickness of utterance. The specimen is now in the museum of the Royal College of Surgeons of England. For permission to publish the case we are indebted to Dr. W. J. Potts, medical superintendent.

SEAMEN'S HOSPITAL, FUNCHAL, MADEIRA.

A CASE OF DOUBLE COMPOUND FRACTURE OF THE TIBIA WITH SIMPLE FRACTURE OF THE FIBULA UNTREATED FOR ONE MONTH; OPERATION; RECOVERY WITH SOUND LIMB.

(Under the care of Mr. J. GEDDES SCOTT.)

ON Feb. 30th, 1899, a sailor, aged 19 years, was admitted into the Seamen's Hospital, Funchal, Madeira, with the following history. Four weeks previously whilst engaged in his duties on board a sailing ship he sustained a severe blow on his right leg from a block of wood. He fell down and on attempting to rise found that he was unable to do so. His companions "bound a rag" round the injured limb and removed him to his berth in the forecastle, where he lay without any further treatment until his vessel put into Funchal to obtain medical assistance. On admission to the hospital his condition was as follows. He had a compound fracture at the junction of the middle and lower thirds of the right tibia and a compound fracture just below the point of junction of the upper with the middle thirds of the same bone. The fibula on the same side had sustained a simple fracture about the middle of the bone. Both wounds on the tibia were suppurating, the lower one having a deep sinus which lead down to dead bone. They were surrounded by unhealthy granulations and the whole leg was swollen and œdematous besides being exceedingly painful. The patient's temperature was 100° F. Both fractures showed good examples of vicious union, the upper having united with the convexity slightly outwards and the lower with the convexity forwards and inwards. The fracture of the fibula was ununited. In the absence of the surgeon the physician to the hospital, Dr. R. Krohn, asked Mr. Scott to operate.

The patient having been anæsthetised Mr. Scott cut down on to the projecting pieces of bone in both wounds, raised the periosteum, and with a bone forceps and chisel removed the projecting fragments together with some superfluous callus and dead bone. He removed with a sharp spoon the unhealthy granulations in the neighbourhood, scraped the sinus after laying it open, and stitched the edges of the wounds together with silk. Having set the fracture of the fibula as well as possible under the somewhat difficult circumstances, the parts were dressed with lint wrung out of a solution of perchloride of mercury (1 in 2000). The dressings were left untouched for a week, during which the patient's temperature fell to normal and the pain in his leg subsided. On removing the dressings the upper wound was found to have healed by first intention, whilst the lower one showed very slight signs of suppuration at its lower extremity. The swelling of the leg had entirely disappeared. After a fortnight the patient was allowed to get up. The fractured fibula had healed with apparently firm union in a good position. In a month's time from his admission he was able to get about with the aid of a stick and the leg showed about half an inch of shortening. He was discharged soon afterwards with a very sound useful limb which he was able to use almost as well as his healthy one.

Remarks by Mr. SCOTT.—The points of interest in the case in my opinion are the following: (1) the remarkable fact of the patient having survived a double compound fracture with two undressed septic suppurating wounds for a month with such few (comparatively speaking) ill effects; and (2) the remarkable manner in which the injuries healed under appropriate treatment and the small amount of shortening that remained.

Medical Societies.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The annual excursion of this society took place on June 12th to the town of Kinross in the East of Scotland. Through the kindness of Dr. Ebenezer Duncan a visit was paid to the new sanatorium in the Ochil Hills. Leaving Queen-street Station at 1.55 P.M. and detraining at Milnathort the party to the number of 27 were conveyed in brakes to the sanatorium. This building, situated in grounds extending to 460 acres abundantly wooded with pine trees, stands on a spur of the Ochil Hills at an altitude of 800 feet. There are 60 bedrooms arranged on three floors opening behind on a corridor 240 feet in length, while to the rear are found the executive rooms, bath-rooms, &c. In the electrical room a demonstration was given of some of the instruments used in the diagnosis and treatment of various forms of tuberculous disease—including the apparatus for supplying electrical currents of high frequency and high potential, the ultra-violet light, and the Roentgen rays. At some distance on the west of the sanatorium the sewage tank is situated, screened off by a belt of trees. The method adopted in the treatment of the sewage is by bacterial purification and the necessary provision in the form of a septic tank and four filter beds with automatic alternating gear was duly examined. After inspection of the sanatorium the party drove to Kinross, where dinner was served in the Green Hotel.

Reviews and Notices of Books.

Clinical Hematology: a Practical Guide to the Examination of the Blood with reference to Diagnosis. By JOHN C. DA COSTA, Jun., M.D., Assistant Demonstrator of Clinical Medicine, Jefferson Medical College. Containing eight full-page coloured Plates, three Charts, and 48 other Illustrations. London: Rebman, Limited. 1902. Pp. 474. Price 22*s.* 6*d.*

THE systematic and complete investigations which have been made during recent years into the changes which occur in the blood in disease have developed an entirely new factor in diagnosis and prognosis. Even yet the value which may be placed on the examination of the blood has not been fully determined, but ample evidence has been adduced to prove that by skilled observance of the variation in form and number of the corpuscles of the blood great assistance is afforded to the physician and the surgeon. The value of such an examination is increased when the percentage of hæmoglobin is ascertained, and occasionally the estimation of the specific gravity and alkalinity of the blood may also be of use.

In the volume now before us Dr. John C. Da Costa, jun., has given an excellent account of "clinical hematology," which forms "a practical guide to the examination of the blood with reference to diagnosis." The author's aim has been to recount the salient facts of hæmatology as they are understood at the present time, to correlate certain of these facts with familiar pictures of disease, and to apply them to medical and surgical diagnosis. When new measures of clinical diagnosis are introduced there is often a great tendency to exaggerate their power and scope. Dr. Da Costa, however, has simply endeavoured to interpret the "blood report" according to its true value as a clinical sign, neither exploiting it as a panacea for every diagnostic ill nor belittling it because of its failure consistently to give the sought-for clue in every instance. The book gains in value by the adoption of this form of procedure; it gives a confidence to the author's conclusions which a more exaggerated tone would fail to do. Throughout the work a minimum amount of theoretical discussion has been introduced, so that the practical side of the subject is paramount.

Intimate familiarity with technique is an essential qualification for the comprehensive study of the work. No pains, therefore, have been spared in the first section of the book—Examination of the Blood by Clinical Methods—to render the directions as minute as possible. Certain apparatus is necessary. The various forms of instruments which have been introduced are described, but the author does not hesitate to name those which have given the best results in his hands. The description of the processes employed to count the erythrocytes and the leucocytes is very lucid. "Durham's hæmocytometer" is highly spoken of. In this device the principles of the older instruments are embodied, together with the substitution of a self-measuring pipette designed to overcome the sources of error which may occur in making blood dilutions with a suction pipette. Dr. Da Costa prefers the use of diluting fluids which contain just a sufficient quantity of a basic aniline dye to stain the leucocytes, so that they may be readily differentiated from the erythrocytes.

Section II. is entitled "The Blood as a Whole" and is concerned with the general composition of the blood, its colour, odour, viscosity, reaction, and specific gravity. An account is also given of various "blood states," such as plethora, hydræmia, lipæmia, melanæmia, cholæmia, uric-acidæmia, and anæmia. A large amount of information not usually found in text-books will be found in the pages devoted to these subjects.

Section III. deals with separate elements of the blood—the hæmoglobin, the erythrocytes, and the blood plaques. Their physiological and pathological variations are duly described. With the advance in knowledge of the changes which the erythrocytes undergo in disease many new terms have been found to be necessary; such words as "normoblasts," "megaloblasts," and "microblasts" are fully explained and the occurrence of these cells in morbid conditions is discussed.

Equally important is the section on "The Leucocytes." The different varieties are explained and their general characteristics are illustrated. Some excellent plates aid in this description. The condition of leucocytosis has attracted much attention within recent years. Its physiological and pathological significations are becoming better understood and many valuable deductions may be drawn from its nature and extent.

The section on "Diseases of the Blood" contains accounts of chlorosis, pernicious anæmia, splenic anæmia, leucæmia, and Hodgkin's disease, in addition to a consideration of "secondary anæmia." The diagnosis of these conditions depends to a great extent upon the microscopic examination of the blood. Dr. Da Costa has given a full and instructive description of the nature of the blood changes found in each disease and the practitioner will find in these pages much that will be of value to him in actual practice. The section on the "Anæmias of Infancy and Childhood" will also be found interesting.

The last section of the book is the largest and is headed "General Hematology." In it are described the changes which occur in the blood in general and systemic diseases. We may draw especial attention to the remarks on appendicitis, enteric fever, malignant disease, and pneumonia. In all of these much valuable information may be derived from an examination of the blood, especially with regard to prognosis. An excellent account is given of the malarial parasite and the plates illustrating the various forms are some of the best that we have seen.

We can cordially recommend this book to those who desire information on a branch of medical science which is at present not widely known but which promises to be much more prominent in the near future than it has been in the past.

The Estivo-Autumnal (Remittent) Malarial Fevers. By CHARLES F. CRAIG, M.D. Yale, Acting Assistant Surgeon, U.S. Army; Pathologist and Bacteriologist to the U.S. Army General Hospital, Presidio of San Francisco, Cal.; late Director of the Bacteriological Laboratories of the Sternberg U.S.A. General Hospital, Chickamauga Park, Ga., the Josiah Simpson U.S.A. General Hospital, Fortress Monroe, Va., and the Camp Columbia U.S.A. Hospital, Havana, Cuba; Member of the American Medical Association, the American Microscopical Society, &c. Illustrated by Two Coloured Plates and 21 Clinical Charts. London: Baillière, Tindall, and Cox. 1901. Pp 221. Price 10*s.* 6*d.* net.

THERE are two questions which at once occur to the reader and reviewer of every book claiming to be of a scientific and practical, and not of a merely speculative, character—namely, whether its author has had a sufficient field for observation and such opportunities for studying a subject as to make what he has to say about it worth reading, and whether he has set forth the results at which he has arrived clearly, intelligibly, and with a definite end in view. We may say at once that in these respects the reader of this book will not be disappointed. A glance at the title-page suffices to show that the official positions which the author has held and the special work on which he has been engaged afforded him a good field and excellent opportunities for observation and that he is consequently enabled, from both a scientific and a practical point

of view, to speak with some authority on the subject of which he treats. We quite agree, by the way, with the spirit of what Sir Frederick Treves said the other day in his address at Charing Cross Hospital about the romance of medicine. No better instance could be cited to illustrate this point of view than that of the modern history of malaria. Not only has the study of the parasitic cause of malaria in its cyclical phases in relation to man and mosquito afforded material of keen scientific interest to the microscopist, naturalist, and pathologist, but the knowledge that has been acquired has this great advantage, that it can be, as it has been, practically applied to the purposes of life with the prospect of being fruitful of present and prospective advantages to humanity. To take one practical point illustrative of the importance of a knowledge of malarial fevers, and especially of remittent malaria fever, we may refer to what occurred at Chickamauga Park camp. The author tells us that hundreds of cases of typhoid fever, pure and simple, were erroneously diagnosed and treated as remittent malarial fever at that camp and that it was largely owing to this mistake that the fever epidemic occurred which compelled the evacuation of the place as a camping-site for the troops in the late war with Spain. A microscope and Widal's test and the systematic application of them by those properly trained in their use, the author contends, constitute all that is necessary for the recognition of these two forms of fever—malaria and typhoid. He deals more especially with the æstivo-autumnal (remittent) malarial fevers; the subject of hæmoglobinuric fever is not considered. Chapter I. starts with the Definition and History of Æstivo-autumnal Fevers. Chapter II. describes the Parasites; Chapter III. deals with the Crescentic, Ovoid, and Flagellated Forms of Æstivo-autumnal Parasites, and this is well and interestingly done; and the same may be said of chapters numbered IV., V., and VI. In Chapter IV. on the Life-cycle of the Parasites within the Mosquito a brief summary is given (pp. 35, 39) of our knowledge of the life-cycle of the æstivo-malarial parasite in man and in the mosquitoes respectively and interdependently in their mutual relations to one another. The chapters dealing with Etiology, Pathology, Clinical History and Features, and Latent Masked Forms and Combined Infections, and those concluding the work on the Complications and Sequelæ, the Diagnosis and Prognosis, and the Prophylaxis and Treatment of Æstivo-autumnal Fevers, also strike us as being full and good. The author of this volume is well posted up in the literature of his subject and has evidently had ample opportunies for making microscopical examinations of the blood and a number of minute observations. It is a book that can be honestly recommended to medical officers of the public services and to all who may be called upon to treat malarial disease or are likely to practise their profession abroad.

Peru History of Coca. By W. GOLDEN MORTIMER, M.D., Fellow of the New York Academy of Medicine. With 178 Illustrations. New York: J. H. Vail and Co. 1901. Pp. 576. Price $5.

WE imagine that all that can be said about coca, "the divine plant of the Incas," has been said in this large volume and a good deal is written also about many other matters ranging from the anatomy of the vocal cords and voice production to gold-washing. Scientific literature would indeed be swelled enormously if treatises of the dimensions of this volume were written upon all the specific principles known of many other divine plants, for surely coca is not the only plant that has been called "divine." The book is dedicated to "Angelo Mariani, Paris, France, a recognised exponent of the divine plant and the first to render coca available to the world." Coca has undoubtedly yielded certain principles of value in medicine but hardly comparable in this regard, surely, with the value, say, of cinchona or nux vomica. Nevertheless, the history of coca as "the divine plant of the Incas" is interesting if it only gives one more illustration of the craving of man for a stimulant of some sort. Moreover, the Incas are an interesting race and the volume before us is more instructive in regard to anthropology than in regard to therapeutics. According to the author the use of the word "stimulant" is invariably misunderstood, most people taking the word to indicate something which arouses flagging energy, as the spur to the horse, only to be followed, however, by a reaction, a more lethargic condition than before. Whatever the strict meaning of stimulus may be taken to be, coca arouses energy without any tax upon the resources and without any despondency ensuing or diminution of activity resulting. At least, such is the view of Dr. Mortimer. The gentleman who has devoted his life-work to rendering the divine herb popular is M. Mariani of Paris, to whom coca is "a recreation, a relaxation, and a source of pleasure wholly removed from sordid commercial interest." Vin Mariani is, however, well known, we believe, and "eminent artists and sculptors have painted and chiseled some dainty examples which serve to typify their esteem for a modern elixir vitæ." Further, "famous musical composers have sung their hosannas in unique bars of manuscript melody," and "poets and writers have versed the qualities of the coca leaf," "royalty have set upon it their meritorious seal of patronage," and, lastly, "the modern church, more liberal than its edicts of long ago, has welcomed its use," for the Pope has approved it and "his Holiness has been supported in his ascetic retirement by a preparation of Mariani's coca, of which a flask, constantly worn, is, like the widow's cruse, never empty." Such rubbish is not creditable to a medical man.

Clinical Lectures on Neurasthenia. By THOMAS D. SAVILL, M.D. Lond., Physician to the West-end Hospital for Diseases of the Nervous System. Second edition. London: Henry J. Glaisher. 1902. Pp. 171. 5*s.* net.

THIS little work consists of five clinical lectures delivered at various times at the Paddington Union Infirmary and at the Welbeck-street Hospital for Diseases of the Nervous System. For the present edition the text of the first edition has been revised and a few alterations have been made. The first lecture deals with the different explanations put forward to explain the nature and cause of "functional" disorders of the nervous system—namely, those unattended by structural changes discoverable by the present means at our disposal. The second lecture defines neurasthenia and briefly describes the general symptoms. The next lecture deals with differential diagnosis and tabulates the differences between neurasthenia, hysteria, and hypochondriasis. Emphasis is laid on the relation of gastric disorders to neurasthenia and it is pointed out that in the majority (three-fourths) of cases of neurasthenia with gastric disorder the gastric trouble precedes the advent of neurasthenia. The fourth lecture refers briefly to neurasthenia which may follow influenza, fatigue, shock, and traumatism. Much needless repetition occurs in the chapters above referred to. The concluding lecture deals with neurasthenic insanity, the description being, however, sketchy and inadequate; while the single illustrative case cited of this form of insanity appears to be open to doubt as a genuine example of this affection. A small bibliography is appended to the work.

LIBRARY TABLE.

Regional Anatomy of the Head and Neck, for Students and Practitioners of Dentistry. By W. T. ECKLEY and C. B. ECKLEY. London: Henry Kimpton. 1902. Pp. 240.

36 Illustrations in the text and 20 Plates in black and colours. Price 12*s.* 6*d.* net.—This work is intended as a guide to those departments of anatomy with which the dental surgeon is particularly concerned. The authors state that they have endeavoured to keep practical applications in view and they certainly have succeeded in producing a most useful book for the student and practitioner. In addition to the more purely anatomical matter there is much useful information bearing on the practice of dental surgery. For example, there is a good account of the reflex pains in connexion with the trifacial nerve, including some valuable suggestions for carrying out a methodical examination of patients suffering from trigeminal neuralgia. In describing operations the authors indicate clearly the structures to be divided and the structures to be avoided. The text, which is throughout clear and concise, is accompanied by some excellent illustrations which are slightly diagrammatic.

The Essentials of Histology, Descriptive and Practical, for the Use of Students. By E. A. SCHÄFER, F.R.S. Sixth edition. London: Longmans, Green, and Co. 8vo, 1902. Pp. 416. Price 9*s.* net.—We have already had on several occasions to speak in high terms of approval of this work which has become a classic. Though it is not comparable with the great handbook of Histology of Professor Kölliker in fulness of detail it is far better adapted to the wants of the student, and it has the still greater merit of completeness, for whilst Professor Kölliker's treatise, commenced long before the date of 1889 on its title-page and promised to be completed, if health permitted, in 1890, is only about half finished in this year of grace 1902, Professor Schäfer's work after reaching its sixth edition is brought to a close and contains the results of all recent observations given in a very clear and instructive manner. It is rendered more instructive by the introduction into the text of a large number of excellent illustrations. Professor Schäfer, we are sure, would be the last to recommend the student to learn histology from its pages, but with a few instruments, solutions, and staining agents the "Essentials of Physiology" will enable the learner to acquire and to comprehend all that it is requisite for him to know in this department of medical education.

A Life Tragedy and other Verses. By WILLIAM TEUCER. London: John Bale, Sons, and Danielsson, Limited. 1902. Pp. 64. Price 2*s.* 6*d.* net.—Mr. Teucer intimates that "half the profits resulting from the sale of the first edition of this volume will be given to the King Edward's Hospital Fund." This being so, we desire to call attention to a bold figure which Mr. Teucer has, in the exercise of his poetic licence, employed with great effect. It occurs on page 58, in the last stanza of a poem addressed to two friends on the anniversary of their silver wedding:—

> "Skipper and mate, they have sailed the deep
> For twenty years and five—
> May the days to be
> Run peacefully,
> And find them still alive,
>
> And happy, when the log records
> The fiftieth milestone gone—
> And a favouring breeze,
> And summer seas,
> To waft them on and on."

JOURNALS.

The Practitioner.—The June number deals extensively with the subject of malignant disease of the uterus. Dr. Arthur H. N. Lewers contributes an article coping mainly with the treatment of this common and disastrous condition. Dr. Lewers has abandoned supra-vaginal amputation in favour of vaginal hysterectomy for cases of cancer of the cervix. He gives details of 61 cases—33 of supra-vaginal amputation and 28 of hysterectomy. 14 of the patients remained free from recurrence at periods of from four to 15 years after operation. Dr. C. Hubert Roberts supplies a comprehensive review of the present position of pathological knowledge regarding uterine malignant disease. He regards adeno-carcinoma as the most frequent type of malignant disease of the body of the uterus and includes adenoma malignum as a variety of this disorder. As regards deciduoma malignum Dr. Roberts seem to incline to the view that the growth may have different origin in different cases and that in some it may spring from fœtal tissues. A review of diseases of the kidneys includes the account of a most interesting case of double hydro-nephrosis in a child six months old.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) TABLOID UREA; AND (2) TABLOID HYPODERMIC MERCURY SUCCINIMIDE.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

(1) UREA in the treatment of tuberculosis has been brought into prominence during recent years. A quantity of from five to 20 grains three times a day has been administered according to the indications of the case. The tabloid is a convenient form for administration, each containing five grains of the pure carbamide. (2) Mercury succinimide appears to possess advantages over the better-known sorts of mercury for the preparation of a mercurial solution for intramuscular injection. It is said to produce no local irritation. The tabloid will be found very convenient and trustworthy as regards dosage in those cases where mercurial treatment by injection is desired.

VARIOUS SOAPS.

(PRICE'S PATENT CANDLE COMPANY LIMITED, BELMONT WORKS, BATTERSEA, LONDON, S.W.)

We have received no less than 12 varieties of soap from the above well-known firm as specimens made from the purest materials, and in those cases in which the soap is medicated the purest active ingredients are stated to have been employed. We have carefully submitted the toilet soaps to various tests relating chiefly to the question of the presence of alkali in excess, of irritants, and of the proportion of water. As a matter of fact, in no single instance was evidence gained of alkaline excess, while, as might be expected, since these soaps are submitted to a special milling and drying process, the moisture present was in minimal amount. It follows that the soaps are economical in use and the ingredients are well proportioned. For toilet purposes and in cases in which sensitive skins are concerned these soaps are just what they should be, free from irritants and bland in action. The samples examined comprised various toilet soaps agreeably scented in a variety of ways and some contained oatmeal. Others were for shaving purposes, as, for instance, the glycerine cream soap, while the medicated soaps contained coal tar, carbolic acid, and sulphur respectively.

ANTIPHLOGISTINE.

(THE DENVER CHEMICAL MANUFACTURING COMPANY, 451-453, WASHINGTON-STREET, NEW YORK; LONDON AGENCY, 18, JEFFREYS-ROAD, CLAPHAM-ROAD, S.W.)

Antiphlogistine is an advance on the ordinary cataplasm. It consists of a perfectly uniform yellowish paste smelling agreeably of well-known antiseptics. The vehicle is a very pure clay or silicate according to our analysis. The

preparation may be used with advantage as an external application in inflammatory conditions. Anti-phlogistine maintains a moist condition of the tissues and exerts a soothing effect, while on account of its marked antiseptic properties it may be used in the treatment of open wounds or ulcers.

PENFOLD'S PURE AUSTRALIAN WINES.

(J. G. THOMSON AND CO., LEITH, N.B., AND 17, FENCHURCH-STREET, LONDON, E.C.)

We have submitted to examination a number of these wines which are produced in the vineyards first planted in 1844 in South Australia by the late Dr. Penfold. The vineyards occur on slopes situated to the east of the city of Adelaide. The character and nature of the wines may be fairly well judged from the following figures of analysis which we have obtained. Mataro (port): extractives, 14·01 per cent.; mineral matter, 0·34 per cent.; alcohol, by weight 17·25 per cent., by volume 21·19 per cent., equal to proof spirit, 37·13 per cent.; fixed acids calculated as tartaric acid, 0·208 per cent.; volatile acids calculated as acetic acid, 0·09 per cent.; and sugar, 11·63 per cent. A sound wine of the character of port but very sweet. Carbinet: extractives, 2·83 per cent.; mineral matter, 0·19 per cent.; alcohol—by weight 13·15 per cent., by volume 16·24 per cent., equal to proof spirit 28·46 per cent.; fixed acids calculated as tartaric acid, 0·231 per cent.; volatile acids, 0·16 per cent.; and sugar, 0·29 per cent. A generous full-bodied wine with a Burgundy character. The amount of sugar is small. Grenache: extractives, 9·42 per cent.; mineral matter, 0·29 per cent.; alcohol, by weight 15·67 per cent., by volume 19·28 per cent., equal to proof spirit 33·79 per cent.; fixed acids reckoned as tartaric acid, 0·20 per cent.; volatile acids reckoned as acetic acid, 0·05 per cent.; and sugar, 7·58 per cent. A sound wine described as claret, but too sweet and alcoholic to belong properly to that class of wine. Tokay: extractives, 11·34 per cent.; mineral matter, 0·21 per cent.; alcohol, by weight 15·67 per cent., by volume 19·28 per cent., equal to proof spirit 33·79 per cent.; fixed acids reckoned as tartaric acid, 0·18 per cent.; volatile acids reckoned as acetic acid, 0·079 per cent.; and sugar, 10 per cent. An agreeable white wine, but heavy as regards both sugar and alcohol. Frontignac: extractives, 12·83 per cent.; mineral matter, 0·30 per cent.; alcohol, by weight 16·46 per cent., by volume 20·24 per cent., equal to proof spirit 35·47 per cent.; fixed acids reckoned as tartaric acid, 0·32 per cent.; volatile acids reckoned as acetic acid, 0·09 per cent.; and sugar, 11·11 per cent. A powerful red wine with good fruity flavour. It may be said generally of these wines that they are genuine and wholesome, though on account of their big body and strength they are better adapted for invalid purposes in moderate quantities than for ordinary table use. Some of them are very strong and very sweet and may be diluted with water with advantage. As the above analyses show, having regard to the volatile acidity, the wines are sound but their high alcoholic strength is sufficient to protect them against deterioration.

BANQUET CREAM.

(HERBERT FRANCIS AND CO., 8, ARTHUR-STREET WEST, LONDON-BRIDGE, E.C.)

We published an analysis of this cream in our issue of May 24th, 1902, p. 1476, when the results were shown to be satisfactory except as regards the amount of fat. It has been pointed out to us that this result was abnormally low, arising probably from the fact that the amount of fat in cream is often apparently low owing to a want of uniformity in consistence. We have therefore selected for ourselves further samples with the result that as a mean amount of fat in three analyses the figures 33·34 per cent. were obtained. This is eminently satisfactory. The complete analysis was as follows: water, 60·90 per cent.; fat, 33·34 per cent.; curd, 5·24 per cent.; and mineral matter, 0·42 per cent. This cream has the advantage of being sterilised, whilst the characteristic qualities of fresh cream are present. As is well known, cream may be substituted with advantage for cod-liver oil and sterilised cream appears to be more digestible than raw cream.

CEYLON TEA.

(HENRY URQUHART, 16, WATER-LANE, GREAT TOWER-STREET, LONDON, E.C.)

This specimen is described as pure high grown Ceylon tea and it is well known that tea grown on high levels yields a less astringent liquor on infusion than that obtained from tea grown in the valley. This is not due apparently to any appreciable difference in the amount but probably in the kind of tannin, for there are many varieties of this acid. We found that this tea yielded an agreeable liquor free from the roughness and astringency of the strong Indian teas. Our analysis gave the following results: moisture, 4·70 per cent.; mineral matter, 5·23 per cent.; theine, 3·40 per cent.; tannin (by the acetate of copper method), 10·69 per cent.; alkalinity of the ash reckoned as potash, 1·35 per cent. These figures are consistent with the description "a genuine pure tea." Though the amount of the tannin is not notably low yet it would appear to exist in a form that is less astringent than that occurring in Indian tea. The tea is suitable when prepared in a proper manner for dyspeptics.

THALASAL.

(ARTHUR AND CO., 69, BERNERS-STREET, LONDON, W.)

The use of this solution is described as "not only far more economical and convenient than the immersion of a patient in a bath of salt water but is also more efficacious, as it may be allowed to dry on the affected part (e.g., in cases of spinal diseases, arthritis, &c.), which cannot well be done after complete immersion without risking a chill." The solution is an opalescent, colourless liquid smelling of oil of roses. Its density was 1061 which corresponds with a strength of 8·5 per cent. of common salt. Further, a mineral residue was obtained on evaporation and careful ignition amounting to 8·42 per cent. It consisted of common salt.

ORION RUBY WINE.

(SOUTH AUSTRALIAN GOVERNMENT BONDED DEPÔT, NORFOLK HOUSE, LAURENCE POUNTNEY-HILL, CANNON-STREET, LONDON, E.C.)

The analysis of this red wine was as follows: extractives, 1·31 per cent.; mineral matter, 0·25 per cent.; alcohol, by weight 13·15 per cent., by volume 16·24 per cent., equal to proof spirit 28·46 per cent.; fixed acids calculated as tartaric acid, 0·27 per cent.; volatile acids calculated as acetic acid, 0·067 per cent.; and sugar, 0·25 per cent. This is a sound and agreeable wine, possessing, however, a somewhat high alcoholic strength characteristic of imported Australian wines. It is a medium-bodied wine, without an appreciable amount of sugar, and suitable for use by invalids.

NATURAL HUNGARIAN BITTER WATER (LORD ROBERTS LABEL).

(KRONTHAL WATERS, LIMITED, 70, DEAN-STREET, OXFORD-STREET, LONDON, W.)

This is a good typical natural purgative water presenting constituents in kind and amount and in ratio to each other suitable for the specific purpose of a saline aperient. Our analysis gave the following results: in grammes per litre, magnesium sulphate, 23·62; sodium sulphate, 15·68; calcium sulphate, trace; sodium chloride, 2·10; and sodium carbonate, 0·62. The total saline contents are thus 42·02 grammes per litre. The density of the water was 1036. It will be seen that the amount of sulphate of magnesium preponderates somewhat over the amount of sulphate of sodium. According to some authorities the former sulphate is mild and painless, non-nauseating, and less drastic in action than sodium sulphate, while magnesium sulphate may be taken in larger quantities than the sodium salt. This water, therefore, presents the advantages just indicated, while the presence of an important amount of common salt and of an alkaline carbonate is calculated to modify favourably the purgative action of the

water. This water has been used extensively on the continent in gastric and intestinal catarrh and in obesity with good results. In spite of its comparatively high mineral strength the water is not so disagreeable to the taste as might be anticipated, which is an important advantage. The particular ratio of the purgative salines would seem to account for this fact. Moreover, the full dose is comparatively small. The water is clear and bright and free from organic matter.

MEDICAL AND ANTISEPTIC TABLETS.

(ARTHUR H. COX AND CO., ST. MARTIN'S-PLACE, BRIGHTON.)

We have received specimens of tablets of various drugs and containing well-known formulæ from the above firm. The tablets are well made and with special care directed towards accuracy of dosage. Amongst those submitted were cascara extract, phenacetin with caffeine, chlorate of potash, with borax and cocaine, potassium permanganate, quinine bisulphate, and trinitin. Very convenient for use also are the antiseptic tablets containing carbolic acid, corrosive sublimate, and mercuric iodide. The antiseptic tablets are prepared with an innocuous colouring matter, so that the stock solution of antiseptic fluid obtained may be distinguished from other solutions by its colour.

New Inventions.

A NEW METHOD OF KEEPING IN APPOSITION THE EDGES OF SURGICAL INCISIONS AND WOUNDS IN ORDER TO PROMOTE UNION.

HAVING for the past three years taken a spare-time interest in the question of surgical suturing I have all along been of opinion that it was possible to devise some method which could take the place of that which has been adopted from time immemorial, notwithstanding the apparently insurmountable difficulties one met at every turn on making an attempt to solve the problem. After devising many different methods and making experiments with almost every conceivable kind of appliance I have selected that hereafter described as being by far the most effectual and practicable. The results which I have obtained from its use and the practically unanimously favourable opinions that have been given to me by surgeons of the highest rank who have investigated it are my apologies for introducing it to the profession by means of THE LANCET.

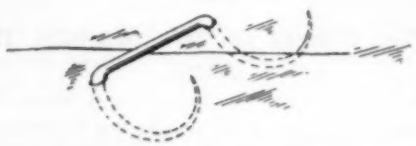
Fig. 1 is a steel clamp consisting of a cross-bar and two pointed prongs represented as lying across the edges of an incision. These prongs are curved as semicircular arcs and

FIG. 1.

The clamp in position for insertion (enlarged).

the plane of both is set at right angles to the cross-bar. The size of the appliance varies according to the depth of the incision dealt with, but I may give three-eighths of an inch for the cross-bar as being about the suitable size for ordinary cuts and scalp wounds such as the general practitioner often meets. In the case of hare-lip a rather smaller size is better, while a much larger size will be required for abdominal operations. These appliances are fixed in position by means of a specially designed holder which ensures a proper grip being given so that the clamp can be easily and properly placed in position. Some operators are tempted to make use of ordinary needle-holders and they fail or bungle in consequence. Once the idea is grasped and the purport of the appliance is understood its application is perfectly simple if the right holder is used. In order to insert the clamp the holder should be gripped by the handles in the right hand, the jaws being horizontal and pointing to the left. The clamp is then placed between the jaws so that the cross-bar lies lengthwise while the points are directed to the right and downwards. Then the lower edge of the lower jaw of the holder is rested upon the skin so that the cross-bar lies at right angles to the edges of the incisions, which have been brought together, and it assumes the position seen in Fig. 1. Gripped and held in this position the appliance is turned round upon the

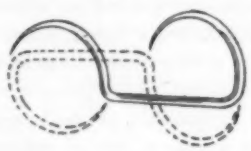
FIG. 2.



The clamp in position after insertion (enlarged). The drawing gives the effect of the prongs coming out through the skin. In practice this is not the case, the points being completely buried.

imaginary axis lying between the centres of the semicircular prongs, the result being that the points enter the flesh and the prongs are buried up to the cross-bar, as seen in Fig. 2, the appliance having become inverted. A depth of tissue is thus commanded which is the measure of the radius of the semicircular prongs. The shape of the prongs and their position with regard to the cross-bar enable them to enter the flesh with the greatest ease, provided the appliance is turned round as near as possible upon the axis between the semicircular prongs. Although a very rough guess will be found quite sufficient for all ordinary purposes, it will be easily understood that the more perfectly this axis is judged the more perfect will be the application and results. A reverse movement (see Fig. 3) will, of course, withdraw the clamp when union has taken place. The prongs having rectangular planes to the cross-bar act as powerful resistants in keeping together the edges of an incision. The curved form of the prongs gives three particular advantages: it facilitates application, it spreads resisting force over a space the measure of the diameter, and it causes the appliance to maintain its proper position.

FIG. 3.



Showing how the clamp turns upon an imaginary axis (enlarged).

I sum up the following advantages for this new appliance. It is absolutely effectual and practicable for the main purpose required of sutures. It is more easily made perfectly and reliably sterile. It is far less irritating than an ordinary suture, not pinching the flesh together too tightly, hindering circulation. It can be applied and removed in a fraction of the time that it takes to complete the application of an ordinary suture and with much greater ease. It is suitable for practically all depths of incisions. It can be used over and over again. Instead of its being less useful in the case of opposed parts that need a good deal of drawing together, as some surgeons have at first thought, it happens to be far more advantageous in such cases by reason of the fact that the pull is not upon a single point as would be the case with an ordinary suture but upon a space the size of the diameter of the prongs. Thus in cases where stitches might pull out this appliance will hold very firmly—one of the smaller sizes will be found particularly useful in hare-lip operations, for instance.

The clamps and holders are made for me by the "Improvements" Supply Association, 18, Eden-street, Kingston-on-Thames.

HAYDN BROWN, L.R.C.P. Edin., &c.

Surbiton.

THE LANCET.

LONDON: SATURDAY, JUNE 28, 1902.

The Illness of His Majesty the King.

To the great grief of all his subjects it became known in London early on Tuesday morning that His Majesty the KING was seriously ill.

We are able to state that an abdominal operation was successfully performed on His Majesty by Sir FREDERICK TREVES on Tuesday morning. The anæsthetic was administered by Dr. FREDERIC HEWITT and was borne well, His Majesty recovering consciousness without any ill-effects whatever. The operation was attended by no complications; a large abscess was found and evacuated.

THE present number of THE LANCET, although it will bear the date of the 28th of June, will be in the hands of our readers some three days before that time, as we arranged for its publication before the ceremonies of the coronation. But now the royal processions through the streets of London, to which hundreds of thousands of the subjects of King EDWARD and Queen ALEXANDRA, hailing from all parts of the world, have so long looked forward with eager anticipation, have been indefinitely postponed. The solemn and magnificent rite at Westminster Abbey which was to set the symbol of sovereignty over a vast empire upon the brow of one whose career as Heir Apparent had fully qualified him for the higher dignity and responsibility of kingship cannot, alas, at present be performed, for the central figure in the ritual lies upon a grievous bed of sickness. The deep anxiety of his subjects in the critical position in which their ruler is now placed is marked on every face. He has convinced his people of his zeal for their welfare and of his ability worthily to uphold the traditions of the throne. Throughout his life he has not only performed with exactness and willingness the duties that came in his way as the natural consequence of his position, but he has sought work and done it in many directions for the good of those whom he was to reign over. This is known to all, and as we acknowledge the influence of the powerful and practical sympathy which has ever been displayed by His Majesty with sickness and suffering our hearts go out to him on his bed of pain. We need hardly remind our readers of such recent incidents as his presiding at Marlborough House over the foundation of the National Association for the Prevention of Consumption in July, 1898, or of the keen interest which he has evinced in the investigation into the causes and possible prevention of the dreaded scourge of cancer. In such matters as these his has not been the perfunctory intervention of an exalted personage; his grasp of the subject has been real and his action judicious and effective. He has acted obviously upon deeply moved feelings and we may be sure that in his turn, now that he has been struck down by illness, he is receiving from his people no mere loyalty of lip-service but the truest and most affectionate sympathy.

King EDWARD'S fellow-invalids of all sorts and conditions have particular reason to bless his name and to pray earnestly for him in his hour of trouble. In 1897 Her Majesty Queen VICTORIA celebrated her Diamond Jubilee, when her eldest son found himself called upon to assist the decision of her subjects as to how they might best commemorate the occasion. On the 6th of February the newspapers contained a letter signed by His Royal Highness which inaugurated the PRINCE of WALES'S Hospital Fund for London. King EDWARD in that letter exhibited the warm-hearted feeling for the needs of his poor subjects, the appreciation of the demands of the occasion, and the business-like grasp of detail that have always been prominent in his actions and utterances. He showed that he knew well that the fittest object on earth for assistance of every sort—ungrudging, open-handed, and immediate—is the sick man whose purse cannot command adequate medical attention, suitable diet, or a proper environment. By his prompt recognition that the sick poor of the metropolis constituted a class with paramount claims upon him, as the figure-head of the kingdom, he proved himself to be at the same time observant, practical, and tender-hearted. It is not only, moreover, with his more conspicuous actions that the medical profession associates the zeal of King EDWARD in the cause of the sick and the suffering. Over and above aid given in the raising of funds on behalf of individual hospitals or by ready participation in the opening ceremonies that inaugurate new buildings, new wings, and new wards,—besides all these, there have been acts of kindness and individual sympathy that have won hearts even more completely because fewer have known of them. There have been visits to hospitals without ceremonial accompaniment, informal inspection of organisation and detail, kind words spontaneously spoken but ever remembered by those whose claim upon royal attention lay only in the fact that they were poor and in pain. Instances of unpretending kindliness such as these show that amid the conventional surroundings of royalty the KING, and here we should include also the QUEEN of this great realm, are endowed with a human sympathy that holds nothing human alien to it. To the sweet lady whose smile has inspirited and whose voice has cheered so many of her humble subjects the heart of those subjects goes out to-day in her sore trial.

The KING is no stranger to illness and suffering. The

deep anxiety felt by this country when he lay upon a bed of sickness more than 30 years ago will still be remembered, as well as the gloom that overshadowed the British dominions when the grave relapse of Dec. 8th, 1871, was made known. Eagerly every symptom of recovery was noted in the constantly issued bulletins throughout the world and great was the rejoicing that celebrated the PRINCE of WALES'S restoration to health. The country must be prepared to go through a similar period of sickening apprehension. We do not belittle the gravity of His Majesty's condition when we urge that it is quite a common one, relieved daily in our hospitals by just such an operation as has been successfully performed upon him; nor do we magnify its gravity when we say that until convalescence is established every symptom must be watched with the deepest solicitude. In the circumstances Sir FREDERICK TREVES'S address on appendicitis which is published in our columns this week will have an absorbing interest for our readers. All our surgical records serve to show that much apprehension of evil sequelæ cannot be justified. In GOD'S hand is the issue.

Neither the King nor the Queen requires any further proof of the love of their subjects, but had this been needed the heartfelt outburst of grief at the tidings of His Majesty's illness would have furnished it. No one who has witnessed the preparations for the present week in London, or in the country, or throughout the colonies and dependencies of the mother-country will have failed to note the spontaneity and zeal which have distinguished everything that has been done. In the metropolis, to which hundreds of thousands have flocked to witness the coronation processions, the outward manifestations of loyalty have by no means been confined to the routes to be traversed or to the organised efforts of municipalities or of groups of wealthy citizens. London has been decorated throughout, in the humblest streets and houses as well as in the most important squares and thoroughfares. And similarly the sadness of the tidings of his grave illness has affected the palace and the cottage, the spacious squares and the narrow slums. Before we again have an opportunity of addressing our readers fuller details of his illness will be forthcoming, while a stage in his recovery will have been reached, at which, it is reasonable to hope, our apprehensions will be greatly allayed. Writing as we do within an hour of the performance of the operation upon His Majesty it would be idle to speculate further than this.

But to one point in the first bulletin we must draw attention. It is evident that the KING fought with the utmost gallantry to fulfil his great engagement, an engagement the constitutional importance of which is enhanced by its sanctity. Indeed, it is possible that had he not resisted so strenuously the idea of a postponement of the Coronation ceremonies he might have escaped the ordeal of the surgeon's knife. The ceremonies of the Coronation could hardly fail to prove exhausting, even to a vigorous physique. Yet, despite his pain, the KING had braced himself to go through with them at all cost, until, fortunately in time to avert a tragedy, nature proved too strong for him. Men of our nation cannot fail to recognise and admire the courage which fought so nearly to the end and despite all risks that the people might not be disappointed. We all love a brave man, and when His Majesty King EDWARD VII. resumes his place among his people he will find them moved to the depths of their heart in gratitude for his restoration to them

Musolino the Brigand.

AFTER a trial of well-nigh three months' duration at the Lucca Assizes the "ROBIN HOOD of Calabria" has been condemned to penal servitude for life, the first eight years of that term to take the form of "carcere cellulare"—that is, of solitary confinement. The proceedings were instructive and interesting from many points of view—judicial, medical, and social. Tedious at all times, Italian forensic procedure is trebly so in criminal cases when counsel for the prosecution and the defence outvie each other in a discursive loquacity, encouraged rather than checked by the presiding judge. Every circumstance affecting MUSOLINO conspired to accentuate this phenomenon. He was the popular idol of a region where law is traditionally more honoured in the breach than in the observance, and witnesses in his behalf were as formidable in number as they were prolific in evidence, exculpatory or palliative. Was he not a self-constituted redresser of social inequalities, "rectifying the financial frontier" by a free-handed bestowal on the poor of the money he extorted from the rich? Was he not "again the Government," defying the police so successfully that the military had to take the field against him? Did he not for years outmanœuvre regiment after regiment, discrediting their commandants and digging the grave of many a professional reputation? Had he not the makings in him of a guerilla leader, prompt to utilise every local advantage? That with such a career he should have been defended by criminologists of the LOMBROSO school as little better than an anthropoid ape or pithecoid man is barely credible; but such is the fact. The public prosecutor and his adjutants had seriously to rebut plea after plea as to his being a "criminel-né" or an "epileptoid" or a "tuberculotic imbecile," to quote a little from the terminology of LOMBROSO or FERRI; but, to do him justice, they were spared a good deal of trouble in this direction by MUSOLINO himself who indignantly resented the pseudo-scientific "attenuanti" set up in his defence and sought to vindicate his conduct and career on the Baconian plea of the "wild justice of revenge." That there were features intellectual and moral in his nature on which psychiatry and sociology would do well to ponder is undoubted, and accordingly we are promised an elaborate study of his case by two of the first medico-psychologists of Italy in the forthcoming "GIUSEPPE MUSOLINO di Fronte alla Psichiatria ed alla Sociologia: Rapporti e Considerazioni dei Professori E. MORSELLI e S. DE SANCTIS"—the former director of

clinical psychiatry in the University of Genoa, the latter lecturer on medico-psychology in the University of Rome. Till this authoritative treatise is made *publici juris* it would be idle to plunge into the "hideous welter" of expert evidence adduced by counsel for the defence, but meanwhile, as preparative to its perusal, it may be well to consider the atmosphere, social and traditional, in which MUSOLINO and thousands like him are born and developed. In Calabria, more perhaps than in any Italian province, life is cheap, even the ties of parental love being elastic enough to admit of the annual sale of children to itinerant "impresarii," by whom again they are sold to organ-grinders and strolling mountebanks in the capitals of Europe. Laws prohibitive of this nefarious traffic are evaded with a success that proves the discredit into which legal authority of every kind has fallen, particularly in Southern Italy. Not to the judicial tribunals, too often venal, invariably so blocked by cases remanded or awaiting trial that years elapse before justice can be pronounced,—not to such tribunals does the victim of wrong or injury look for redress but rather to private *vendetta* aided by sympathising relatives or friends. Add to this that hardness of living as to food and shelter robs the prison of its terrors and that the abolition of capital punishment still further minimises deterrents and we are in a position to understand the great criminal statistician Baron GAROFALO when he says: "Take Europe, *minus* Spain and Portugal (the Iberian peninsula), and you will find more murders committed year by year in Italy than in all the other European countries put together." In fact, as the same eminent authority pointed out in a memorable "conferenza" held in Rome some years ago, "an Italian kills an Italian every two hours," the homicides throughout the kingdom being seldom below 4000 annually, and in the year before the said "conferenza" amounting to the ghastly total of 4380. As a contributor to these figures MUSOLINO is only some units in advance of contemporary brigands in Sicily and Sardinia, while every youth who carries the prohibited "coltello"—the "accursed knife," as ANTONIO GALLENGA called it—is a potential homicide, under the all too frequent provocation of vinous excess or that master demon of the Italian proletariat—jealousy or disappointed love. Well may Italy feel mortified at the sinister priority she maintains in "fatti di sangue." Well may she take it to heart that the anarchist, in precept and in practice, finds so many exemplars among her sons.

On the Treatment of Early Mental Cases in General Hospitals.

A FEW weeks ago we commented in a leading article on what may be considered the burning question of the moment in the subject of insanity—viz., the treatment of early cases of mental derangement in general hospitals. Two papers bearing on this subject have recently been read, one by Dr. J. W. SPRINGTHORPE at the April meeting of the Medical Society of Victoria, the other by Dr. NATHAN RAW before the Liverpool Medical Institution in February of this year, and both were published in THE LANCET of June 14th. We commend their perusal to our readers, for the question with which they deal is of great importance to all medical men. Though Dr. RAW'S paper deals essentially with the correlation between mental and bodily diseases (and this part of his paper we do not now discuss) he declares towards the end of it his sense of the advantages to be derived from the treatment of most cases of early mental disease in reception-houses. Dr. SPRINGTHORPE also advocates the erection of reception-houses thoroughly equipped and managed by a scientific staff. All this is in the direction which we have indicated, and it is satisfactory to note that the scheme which we advocated for the metropolis appears to coincide with the views of colonial and provincial experts. A great number of early mental cases are at the present moment treated in the out-patient rooms of general hospitals, and among these we may specify St. Thomas's Hospital in London and the General Hospital at Sheffield; and it would, we think, be well that other hospitals should establish clinics of this kind to be conducted by the lecturers on psychological medicine. A certain proportion of these out-patients will, perhaps, be found to require more special treatment and as they will usually be unsuitable for the wards of the general hospital (at any rate in London) they can be sent to reception-houses for detention until it is seen how the disease develops. At the same time it seems to us that there is some tendency to optimism in the present rush to treat all acute mental disease in general hospitals. Whilst agreeing with the principle of dealing with cases of this sort in general hospitals as much as possible, it must not be forgotten that the asylum must still remain a necessary fact for many persons and that the less that is said about the "stigma of certified insanity" the better it will be for those who have to go through asylum treatment. Whatever "stigma" there is will be much more accentuated if it appears that a person fails to pass the test first of the out-patient room and then of the hospital or reception-house. It is greatly to be regretted that the fact that an individual has to be placed under certificates for his own protection, or more often for that of his property, should be deemed discreditable or opprobrious. The bugbear is more in the minds of others than in that of the patient himself, and it should no more be esteemed a disgrace that a person has had to be treated in a hospital for mental disease than it should be that he has had to be treated for any other complaint in the wards of a general or special hospital. Another point to be remembered is that certificates of lunacy are not so often meant for the protection of society from the lunatic as for the safety of the patient from the machinations of his friends. The lunacy laws were framed for the protection of people against evils some of which apparently are in the near possibility of a revival—we refer to the increasing fashion of treating in "homes" people who are undoubtedly insane. These "homes" are not under supervision of any kind and there seems to be no guarantee that abuses of the very sort that certificates were devised to render impossible may not re-arise because of the shrinking of over-sensitive people from the term "certificate of lunacy." It is of good augury that such enlightened and new measures as treatment in or by general hospitals should be strongly advocated, but it is simply self-deception and false kindness to assume that it is always possible to dispense with certificates. Whether the cause of the insanity be central or bodily the symptoms may

be the same both in intensity and duration; and we are at one with Dr. CHARLES MERCIER in his letter which we published last week, wherein he protests against "the view that insanity is a thing apart, a specific entity," having no community of nature with what Dr. RAW classifies as temporary aberration of mind. And although insanity due to bodily causes may not be so detrimental to the prestige of the family as when the cause is due to breakdown in the central system, it is nothing but a sickly sentimentalism that would refuse to extend to the former the security afforded by the law. The present outcry against certificates is partly the result of reaction against a process which has been too freely resorted to and partly follows on a better appreciation of the pathology of insanity; but there are occasions when asylum treatment under certificates is a blessing and not a curse. It ought to be regarded as a sanitary quarantine in the interests of all parties.

The Seed and the Soil.

WITH the discovery of pathogenic micro-organisms the views with regard to infection and intoxication which had previously been held underwent very considerable changes. Formerly, the term "infective diseases" was understood to denote those maladies which were caused by certain poisons or noxious bodies which either entered the body from without or were manufactured in, or by, the tissues of the diseased person. The investigations which have been made as to the properties and mode of action of the bacillus of tuberculosis offer a good example of the influence which has been exerted on the minds of medical men by the discovery that certain diseases are caused by living germs. The description of that bacillus by Professor KOCH in 1882 and the proof of its causal relationship to the disease naturally led to great modifications in the treatment of pulmonary tuberculosis, the object of the many investigators, who at once set to work, being to search for means to destroy the bacilli which were causing the destruction of pulmonary tissue. Although 20 years have elapsed since that time no direct germicide has been found which will destroy the germs within the lungs without injury to the host. Nevertheless, a form of treatment has been introduced which promises hope of success, not by directly killing the bacilli but by rendering the tissues unfavourable to their growth. In other words, since bacteriology has become a recognised branch of medical science too much attention has been directed to the germs themselves and not sufficient to the soil in which they grow.

To this aspect of diseases caused by micro-organisms attention has been prominently called by two addresses which have been published in our columns. Dr. W. HOWSHIP DICKINSON, in delivering the Baillie Lecture at St. George's Hospital, gave an eloquent address with the "parable of the sower" as a text.[1] He reminded his hearers that the distribution of plants within the range of the seed is regulated by the local conditions which the seed meets with—soil, moisture, temperature, light, and what not. Of course there is no growth without the seed and an infectious disease cannot attack an individual without the pathogenic organism becoming engrafted in his tissues. "*Omne vivum ex ovo* holds good now as in the time of HARVEY. But the seed may be indiscriminately and widely spread; within certain wide boundaries it may often be said to be ubiquitous, so that the whole question of distribution turns not upon the seed but the soil, not upon the germ but its reception." Dr. DICKINSON also instanced the resistance to infection as shown by medical men when he remarked, "Many of us—I may even say most of us—are frequently exposed to infection without being infected in virtue of the unproductiveness of the soil in which the seed falls. Some persons are prone to succumb as others are to resist." There are undoubtedly conditions of the body, both of blood and of tissue, which predispose to the entertainment or to the rejection of certain infective diseases. These conditions, which are sometimes included in the term "second etiological factor," have not been fully ascertained and considerable diversity of opinion exists in regard to them. There has been recently a marked tendency to discount the power of heredity; for example, in reference to tuberculosis the importance of family history is seen to have been much exaggerated. Certain authorities maintain that infection exerts a much stronger influence than does heredity, and modern research tends to confirm this view. Certainly heredity alone cannot cause the disease but the same is the case with the pathogenic bacillus, otherwise the human species would long ago have become extinct. But heredity prepares the soil for the favourable reception of the seed. Dr. STEPHEN MACKENZIE in the annual oration of the Medical Society of London delivered in May of this year[2] also dwelt upon the same subject and maintained that there was no doubt that the progeny of the tuberculous are much more liable to tuberculosis than are those in whose family no such strains run. On what conditions that predisposition depends there is no absolute knowledge. It is also a fact, however, that if every means is taken to improve the general condition of individuals thus weakened by inheritance—that is to say, if healthy surroundings are provided and measures for developing the chest and increasing the expansion of the lungs are adopted—the resistance against the inroads of the bacillus may be greatly strengthened. Dr. MACKENZIE extended his remarks to a consideration of the natural resistance to influenza, rheumatic fever, and appendicitis. With regard to the last-named disease, much information has been obtained within recent years. Peculiarities of position and anatomical formation of the appendix and its mesentery tend to produce contortions and contractions and interference with the circulation in the appendix which prevent the discharge of its secretions, favour the formation of fæcal concretions, and check the expulsion of foreign bodies accidentally entering its canal. In one of these ways the vitality of this portion of the intestinal tract becomes impaired. The organisms in the appendix find a medium which enables them to grow and to multiply, so producing inflammation and its attendant results. The soil is pathologically prepared for the virulent growth of the seed; examples of analogous conditions will occur to all our readers.

In dealing with diseases caused by micro-organisms there has been a tendency to overrate the power of the infective

[1] THE LANCET, May 10th, 1902, p. 1297.

[2] THE LANCET, May 31st, 1902, p. 1513.

agency. This tendency in the routine of modern medicine, which most of us admit to be unfortunate, can be mentioned without belittling the faithful and splendid work of bacteriologists who number among them some of the foremost scientific men of the day. Indeed, we may say that it is the excellence of their achievements that has led to the position, for their aid has been so powerful that an inclination has been created to leave everything to them. But bacteriologists naturally regard disease mainly from a laboratory standpoint. Their investigations have produced results which can scarcely be over-estimated, especially in regard to prophylaxis, but it is for the medical practitioner to regard the natural resistance against disease, possessed by every human being to a greater or less extent, as of equal or even greater importance than the infective agents. It is the physician's duty to heal and as we have shown, for purposes of treatment, the care of the soil has very often a more practical result than the attempted destruction of the seeds.

Annotations.

"Ne quid nimis."

THE KILLED AND WOUNDED IN CIVIL LIFE.

IN spite of several Acts of Parliament, each one more or less admirably drafted, accidents in British factories and workshops are of hourly occurrence. It is probable that the man in the street has no notion of this. He possibly imagines vaguely that now and again an employé may meet with an injury but were he to be told that during each hour of every working day about 12 people engaged in the production of trade material sustain injuries of one sort or another it would, no doubt, shock him considerably. That soldiers should be killed or suffer wounds in battle is inevitable, yet after each publication of casualty lists the national heart bleeds afresh. Casualty lists of the killed and wounded in civil life are published only once a year, in the annual report of the Chief Inspector of Factories and Workshops. Last year there were 83,760 non-fatal accidents and 1035 accidents which ended fatally. In 1900 the numbers respectively were 77,975 and 1045. It is not too much to say that the whole of these so-called accidents are avoidable. No doubt many of them are due to carelessness or negligence on the part of the victims, but it cannot be denied that some are caused by defective or worn-out machinery and appliances.

OPHTHALMOLOGY AT OXFORD.

OUR readers will find in our columns this week another example of the good fortune that is at present attending Oxford. Its time-honoured university has scarcely recovered from the shock of the noble gift of the Rhodes scholarships before a benefactor, Mrs. Margaret Ogilvie, who in after years will be styled "of pious and blessed memory" but who is at the present moment fortunately able to see and to appreciate the good results of her liberality, has presented to it a sum of money yielding a yearly income of £200 at least for the maintenance of a readership in Ophthalmology. This gift the University has accepted with great alacrity and gratitude, especially as it is weighted with few conditions and will draw nothing from the University chest. The intention of the generous donor is primarily to encourage the prosecution of original research in the department of ophthalmology and secondarily to provide instruction in diseases and defects of the eyes and their treatment for members of the University of Oxford and for legally qualified members of the medical profession. With this end in view systematic and clinical lectures as well as demonstrations are to be given. The reader is to be chosen by a board of eight members most of whom occupy an official position in the University, whilst others are connected with the Oxford Eye Hospital, and one is the President of the Royal College of Surgeons of England. The duties with which the Margaret Ogilvie's Reader in Ophthalmology, as he is to be termed, is interested are to deliver without fee 12 lectures during the University academical year to all legally qualified medical men, at least six of which shall be systematic, whilst the remainder may at his option be clinical. He is to devote himself to, and to conduct original research upon, the pathology and therapy of diseases of the eye and to furnish a yearly report to the Board of the Faculty of Medicine giving in detail the result of his investigations. He must retire at the age of 60 years, except by the special grace of the electoral board, which is empowered to grant him five years' additional tenure of the office and no more. He must be honorary surgeon to the Oxford Eye Hospital, and if the honorary surgeon declines to accept the readership no appointment is to be made, but the yearly interest is to be added to the capital sum. Finally, he must reside for 30 weeks in each year in Oxford or within a mile and a half of its centre, Carfax. For his salary he is to receive three-fourths of the interest on the capital sum and the proceeds of a capitation fee of £2 on the medical students whom he can attract to his lectures. The remaining fourth of the interest is to be spent on supplying apparatus, diagrams, and other requisites for research in ophthalmology and for purposes of instruction. The first holder of the office of the Margaret Ogilvie Readership in Ophthalmology is Mr. Robert Walter Doyne, F.R.C.S. Eng., of Keble College. We congratulate Mr. Doyne on his appointment and trust that he may long retain it. He has distinguished himself in various ways and is a man endowed with much originality and power of research. He must, we are sure, feel that his labours will constitute a precedent for his successors and that he should spare no effort to render the office worthy of the place it will hold, both at home and abroad, as a great centre of ophthalmological research in England. On the physical side of optics he has the advantage of easy communication with the most learned and experienced physicists, whilst in the Oxford Eye Hospital he has abundance of material ready to his hand for investigation. Many points in the pathology and treatment of the diseases of the eyes are uncertain and obscure and it is only by the patient observation and the leisure that can be obtained in such a university as Oxford that some of these problems can be elucidated. In the meanwhile we shall watch with interest the results that will be obtained from Mrs. Margaret Ogilvie's generous effort to establish ophthalmology on a sound and broad basis in Oxford and we take the opportunity of recommending her action to others who are possessed of large or small accumulations of wealth as one that is highly commendable and worthy of imitation.

THE DEPTH OF SLEEP.

AN interesting communication on the depth of sleep in normal individuals and in psychopathic persons is contributed by Dr. Sante de Sanctis and Dr. U. Neyroz to the *Psychological Review* for May last. Previous observers had made use of auditory stimuli or sounds of definite degrees of loudness to determine the depth of sleep from which the sleeper could just be awakened and this was the method adopted by Kohlschütter, Michelson, and others. Dr. de Sanctis and Dr. Neyroz adopted the method of tactile

and pressure stimuli, using for this purpose æsthesiometers with both sharp and blunt points, the pressure of which could be nicely regulated to a degree just sufficient to cause awakening. The experiments made on any one person lasted over a period of about six consecutive months and were carried out at different hours on successive or irregularly alternating nights. Four of the persons studied were normal subjects and five were psychopathics affected with some form of nervous disorder. As the result of many thousands of separate observations made and carefully collated and plotted into the form of "curves of sleep" it appeared that the maximum depth of sleep was attained within one and a half hours of falling asleep and generally in the third half-hour, after which the curve of sleep became shallower. Hourly oscillations in the depth of sleep occurred thereafter with a maximum and a minimum for each hour, the curve, however, descending on the whole for a while until a second deepening of sleep occurred. This "secondary deepening" lasted about one and a half hours and occurred during the middle period of the total duration of sleep. In all the five pathological subjects the depth of sleep was far greater than in normal persons. These included three epileptics, one paralytic, and one "degenerate" or feeble-minded patient. It was also found—contrary to the common belief that neuropathics and epileptics were light and restless sleepers—that sleep was very deep in the majority of cases (60 per cent.) of epilepsy with the classical symptoms of *haut mal*. The curves of sleep, however, differed much more among abnormal than normal subjects. In the course of the investigation it was also found that dreams occurred in every period of sleep and even in the earlier hours when the depth of sleep was greatest, but they were more frequent and more vivid in the later hours of sleep, especially towards morning. The "dream activity" of psychopathic persons was slight as compared with normal subjects and the memory of them was also less marked or definite.

LUNACY IN SCOTLAND.

THE forty-fourth annual report of the Commissioners in Lunacy for Scotland states that the number of insane persons in Scotland under official cognisance was 16,288 on Jan. 1st, 1902, as compared with 15,899, which was the corresponding figure for the previous year. An increase is thus apparent of 389 insane persons during the year 1901. These figures do not take account of insane persons maintained at home by their natural guardians, as no official returns are made of such persons. Since 1858 the number of lunatics under the jurisdiction of the Board of Commisioners has increased 180 per cent., whereas the increase of the population of Scotland during the same period has been 49 per cent. The proportion of lunatics to the general population shows that the increase has been a steady one. Thus for every 100,000 of the general population there were 302 lunatics in 1890, 324 in 1895, 347 in 1900, 349 in 1901, and 353 in January, 1902, and this increase seems to hold good for both private and pauper patients. The number of patients admitted during the year to all institutions amounted to 3500, comprising 538 private and 2962 pauper patients. Of this total 1771 were males and 1729 were females. The number of patients discharged as recovered during the year amounted to 1495, or 11·5 per cent. of the average number resident in all establishments. The deaths during the year amounted to 1087, or 8·4 per cent. as calculated on the same basis. Of the deaths 20 were due to suicides and accidents, 53 to epilepsy and convulsions, 84 to apoplexy and paralysis, 95 to senile decay, 137 to phthisis, 147 to cardiac disease and its complications, 167 to general paralysis of the insane, and the rest to other causes. Among the cases of general paralysis which ended fatally during the year 136 patients were males and 31 were females. The various institutions for patients include seven Royal or chartered asylums established prior to the Lunacy Act of 1857, 16 district asylums created under the provisions of the said Act, three private asylums, lunatic wards licensed by the board to receive pauper patients and forming part of 15 poorhouses, two institutions for imbecile children, and the lunatic department of the General Prison at Perth for the accommodation of insane prisoners and convicts. In connexion with the subject of the increase of pauper lunacy during the past two decades, a point to which attention had been from time to time directed in former reports, the Commissioners publish a detailed account of the conditions prevailing in the island of Lewis in Ross-shire, a district which does not form part of any great commercial or industrial area and is not much affected by such disturbing factors as immigration or emigration. The statistics of this locality for the past 20 years show a very considerable increase of pauper lunacy, apparently *pari passu* with a corresponding growth of pauperism in the district. The Commissioners are of opinion that many persons in the district referred to are now recognised as lunatics and sent to the asylum for treatment who would not have been so recognised and treated 20 years ago. This change, though it has been in operation longer in other parts of Scotland than in Lewis, is "believed by the board to account for the general growth of pauper-lunacy in Scotland. It has its chief source primarily in the more widely-spread desire to look to the parish as bound to provide for the mentally defective members of a family and in the increased willingness of parish councils to recognise such claims." Regarding the cost of maintenance and other expenses connected with the reception and care of patients, it appears that the average annual cost per head was £43 4*s.* 9*d.* for all district asylums. The expenditure per head on pauper lunatics is recognised as having steadily increased since 1895 owing to increased cost of maintenance and of land and buildings. A supplementary report on the dieting of pauper lunatics in Scotland by Dr. J. C. Dunlop has also been issued by the board, and an account of it appeared in THE LANCET recently.[1]

CANCER RESEARCH IN THE UNITED STATES.

THE second annual report of the Cancer Committee to the Surgical Department of the Harvard Medical School was published in a series of articles in the *Journal of Medical Research* for May. The findings of the committee, which were the results of painstaking investigations of a year's duration, were decidedly antagonistic to the parasitic theory of the origin of cancer. The conclusions reached were summarised by Dr. Edward H. Nichols, demonstrator of surgical pathology at the Harvard Medical School, as follows. It has been claimed by the adherents of the theory of the parasitic origin of cancer that (1) a proliferation of epithelial cells analogous to the lesions seen in cancerous tumours can be produced by certain well-known protozoa (nodules caused by the coccidium oviforme); (2) certain skin lesions characterised by epithelial cell proliferation are due to the action of a so-called protozoon (molluscum contagiosum); (3) blastomycetes are constantly present in human cancers and are the cause of the lesion; (4) by experimental inoculations of animals with "blastomycetes" true epithelial or cancerous nodules can be produced; and (5) finally, the well-known endocellular bodies seen in the protoplasm of cancer cells have a definite morphology; these are the "parasites" and the supposed cause of cancer. The results of the work pursued by the investigators lead them to these conclusions: (1) the lesion produced by the coccidium oviforme is essentially a process of chronic

[1] THE LANCET, May 31st, 1902, p. 1549.

inflammation and is not analogous to the lesion seen in cancer; (2) the lesion in molluscum contagiosum is characterised by certain changes in the epidermis, is not due to the action of a protozoon, and is not analogous to cancer; (3) the so-called "blastomycetes" ("saccharomycetes") of Sanfelice and Plimmer are torulæ; (4) the lesions produced by these "blastomycetes" (torulæ) are essentially nodules of peculiar granulation tissue, and are not cancerous or in any sense true "tumours"; (5) blastomycetes are not constantly present in human cancers; and (6) the peculiar bodies seen in the protoplasm of cancer cells are not parasites or the cause of the lesions, but probably are in part at least atypical stages of the process of secretion by glandular epithelium.

THE METROPOLITAN WATER-SUPPLY.

THE report on the condition of the Metropolitan Water-supply during the month of April last has recently been issued by the Water Examiner appointed by the Local Government Board. The Thames water at the intakes of the companies was in good condition during the whole of the month. The height of the Thames varied from three inches above to nine inches below the average summer level. The average daily amount of water abstracted from the Thames was 117,263,936 gallons, from the Lee 44,641,921 gallons, and from springs and wells 44,266,786 gallons. The daily total amount of water distributed was 206,428,613 gallons for an estimated population of 6,349,333, and this represents a daily consumption per head of 32·51 gallons. This estimate, it may be remarked, entirely ignores the quantity of water used for manufacturing and other trade purposes. So that the daily consumption per head is really considerably less than the amount stated in the report of the Water Examiner. According to the calculation of the engineer to the East London Waterworks Company, the approximate amount of water used for other than domestic purposes is no less than 30 per cent. of the total quantity delivered. During the month of April last three of the metropolitan companies—the Chelsea, the East London, and the Kent—distributed a smaller quantity per head to their customers than they did during the corresponding month of the year 1901. The other five companies distributed a greater quantity. The metropolitan company which during April, 1902, gave the largest average daily supply per head was the Chelsea Company (39·63 gallons) and the company which gave the smallest average daily supply per head was the East London Company (26·93 gallons). The amount of water which is now obtained from wells is considerable. Of the total quantity distributed during the month that derived from springs and wells was no less than 21·444 per cent. The Chelsea, the Grand Junction, the Lambeth, and the West Middlesex companies have no wells. The East London Company on an average pumped daily 8,455,000 gallons from wells and 1,372,000 from Hanworth "springs." The Kent Company pumped daily an average quantity of 18,079,701 gallons from wells. It would be instructive to know the amount obtained from each well, but we are not aware that the Water Examiner has ever made any attempt to obtain this information. The New River Company distributed daily an average amount of 14,131,353 gallons of filtered water derived from springs and wells, 913,732 gallons of unfiltered spring and well-water, and 255,970 gallons derived from the Hampstead and Highgate ponds. The Southwark Company pumped daily from their Streatham well an average quantity of 1,297,000 gallons. Dr. T. E. Thorpe, F.R.S., the analyst appointed by the Local Government Board, reports that organic carbon was present in the samples of water analysed by him in proportions ranging from 0·040 to 0·225 units in every 100,000 units of the water distributed by the companies. The proportions of brown tint observed in a two-foot tube, ascertained by their comparison with the standard tint usually employed, ranged from three degrees to 20 degrees. The water supplied by the Lambeth Company exhibited the deepest average tint of brown. The Water Examiner states that "all the samples of water collected at the works of the companies were efficiently filtered." He, however, gives no authority for this statement, nor is there any evidence in the report to show that the Government analyst has ever at any time made any analysis of water collected at the works of any company. The following table, which corresponds with some of those recently published, gives the most important results of the full analyses made by Dr. Thorpe of one specimen of water distributed by each of the metropolitan companies:—

Results of Analysis expressed in Parts per 100,000.

Company.	Date and place of collection of the specimen.	Organic carbon.	Organic nitrogen.	Nitrogen as nitrates and nitrites.	Total combined nitrogen.	Chlorine.
Chelsea	April 14th.—Cab-rank, Victoria-street.	0·217	0·018	0·197	0·215	1·9
West Middlesex	April 14th.—Cab-rank, Earl's Court-gardens.	0·225	0·018	0·195	0·213	1·9
Southwark ...	April 14th.—Cab-rank, near the "Swan," Stockwell road.	0·182	0·015	0·189	0·204	1·95
Grand Junction	April 14th.—Cab-rank, Pickering-place, Westbourne-grove.	0·189	0·014	0·187	0·201	1·85
Lambeth	April 14th.—Cab-rank, St. George's-road, Southwark.	0·176	0·015	0·206	0·221	1·9
New River ...	April 14th.—Cab-rank by St. Clement Dane's Church, Strand.	0·070	0·009	0·194	0·203	1·55
East London ...	April 14th.—Police-station, Poplar.	0·182	0·016	0·206	0·222	2·5
Kent	April 14th.—Cab-rank, New Cross Station, opposite Jermingham-road.	0·040	0·003	0·476	0·479	2·0

RELIGION AND QUACKERY.

WE have before us a singular advertisement which has been forwarded by a correspondent who has taken it from the *Catholic Times*. It emanates apparently from Buckfast Abbey, Buckfastleigh, in the county of Devon, an institution which the "Catholic Directory" shows to have been founded within the last 20 years and to be under the charge of a prior and nine or 10 members of the Order of St. Benedict who mostly bear foreign names. The advertisement in question proclaims the merits of the "Buckfast Abbey Remedies, all prepared by the Benedictine Monks of Buckfast Abbey, Devon," and in no way differs in language and appearance from other advertisements of quack medicines that are put forth in newspapers for the attraction, rather than for the benefit, of the credulous. Our surprise at its appearance is caused by its purporting to emanate from a body which professes to be formed of religious men whose care for the souls of their fellow-men should not be adulterated with the desire to make money out of their bodily ailments. We recommend the Bishop of Plymouth, in whose diocese the "Abbey" in question is presumably situated, to consider whether its monks are consulting the dignity of their order and their religion in their laudation of the "Buckfast Abbey Tonic," the "Buckfast Abbey Tonic Pills," the "Buckfast Abbey Salve," the "Buckfast Abbey Antibilious Pills," and the "Buckfast Abbey Antipyretic Liniment." To criticise a single "remedy" only in detail, we may point out that the

salve is declared to "cure" among other things "cancerous wounds, carbuncles, tumours, scrofulous sores, and similar diseases." Cancer and tumours, if they exist, are not things to be played with, and one of the worst of the many bad results that attend the unrestricted sale of quack nostrums is that they cause delay in the seeking of surgical and medical aid. We invite the bishop to whom we have referred and the heads of the order which seems to be responsible for these paragraphs to inquire carefully whether the terms in which the goods offered are recommended are justified by the nature of the goods themselves. If not the buyers are deceived and the sale becomes a questionable transaction in which more than dignity and decency is involved. Public opinion may to some extent excuse the advertisement of the ordinary quack as venial puffery of his wares. We regret that it should do so but the ordinary quack does not advertise pills and liniments, salves and tonics with notice that they can be obtained from a "Reverend Procurator" at an abbey. If the Benedictine order really sanctions the appearance of advertisements of this class we can only say that it would do better to confine its commercial dealings to the manufacture and sale of its well-known and highly-esteemed liqueur.

UNILATERAL OCCURRENCE OF KERNIG'S SIGN AS A SYMPTOM OF BRAIN DISEASE.

IN 1883 Kernig described a sign of meningitis which has been named after him: when the thigh is extended the hamstring tendons are relaxed, but when the thigh is flexed the leg cannot be extended beyond 135° in consequence of rigidity of the hamstring muscles. The frequency of Kernig's sign in meningitis has been confirmed by many observers. Dr. Roglet[1] found that it could be elicited easily in 85 per cent. of the cases, whether the meningitis was meningococcic, pneumococcic, streptococcic, or staphylococcic. In tuberculous meningitis it is less frequently found. Spinal meningitis is not necessary for its production. But it may occur in other cerebral affections—e.g., hæmorrhage.[2] Several explanations of the mechanism of Kernig's sign have been put forward. The most satisfactory of these seems to be Chauffard's view that the rigidity is due to an exaggeration of the normal tonicity of the hamstring muscles and is analogous to retraction of the head in meningitis. In the *American Journal of the Medical Sciences* for May Dr. Joseph Sailer has recorded a case in which Kernig's sign was unilateral and which so far appears to be unique. A male, aged 20 years, was admitted to hospital on Sept. 16th, 1901. He was partially delirious and complained of severe headache and pains all over the body. For two weeks he had had pain in the side, backache, and headache. On Sept. 14th he went home from work complaining of intense headache and soon became delirious. Next day he was acutely delirious and the head was retracted. The temperature was 104° F. The left arm was strongly flexed and rigid. The reflexes were not exaggerated. Kernig's sign was readily elicited in the left leg. The right leg could be extended in an almost straight line with the thigh when the latter was fixed at right angles to the abdomen. There were numerous subcrepitant râles at the bases of both lungs and slight increase in vocal resonance at the left base. The urine contained albumin and blood and granular casts. On Sept. 18th he was worse. When roused there was lagging of the movements of the left upper eyelid. The mouth was drawn to the right and the right side of the face was wrinkled while the left was smooth. Next day the head was turned to the left and the left pupil was smaller than was the right. There was marked flexor spasm in the left arm which seemed to be paretic. The knee-jerks were slightly increased and Kernig's sign was found in the left leg. On the 20th the head was turned strongly to the left and the left arm was firmly flexed. The right leg was not moved voluntarily. In the left leg occasional irregular movements occurred and Kernig's and Babinski's signs were both obtained. A systolic murmur was heard most distinctly at the cardiac apex. A purpuric eruption appeared all over the body and involved the conjunctivæ and mucous membrane of the mouth. The staphylococcus aureus was found in the blood in pure culture. Death occurred on the 21st. The necropsy showed ulcerative endocarditis of the aortic valves, cloudy swelling of the kidneys, congestion of the cerebral meninges and a softened area in the left motor region, and old osteomyelitis of the left tibia. The staphylococcus aureus was cultivated from the brain. Dr. Sailer suggests that the staphylococcus was latent in the tibia and thence invaded the body. In this case there was unilateral spastic paresis from the cerebral softening. The spasticity did not produce rigidity of the hamstring muscles when the thigh was extended but did when the thigh was flexed, giving rise to Kernig's sign.

[1] Thèse de Paris, 1900, and THE LANCET, Dec. 1st, 1900, p. 1594.
[2] THE LANCET, Jan. 6th, 1900, p. 47, and Feb. 9th, 1901, p. 397.

A MEDICAL STAFF COLLEGE.

IT will be remembered that the last of the general recommendations of the report of Mr. Brodrick's committee, appointed to consider the reorganisation of the Army Medical Service, strongly suggested the establishment of a military hospital and medical staff college for the training of officers of the Royal Army Medical Corps. The report recommended that steps should be taken by the Advisory Board as soon as it was constituted to present a detailed scheme for the establishment of such a hospital and staff college for the consideration of the Secretary of State. No time has been lost in commencing this reform, though necessarily an interval must elapse before the arrangements are completed. We are informed by the War Office that the next session of the Army Medical School will be held in London and it is understood that the laboratories of the Royal Colleges on the Embankment will be temporarily at the disposal of the Royal Army Medical Corps.

SCLEROSIS OF THE SUPERFICIAL VEINS OF THE LIMBS.

WIDESPREAD sclerosis of veins at all comparable to arterio-sclerosis appears to be unknown; but a few cases of sclerosis of the superficial veins of the limbs have been described by French writers. At the meeting of the Société Médicale des Hôpitaux of Paris on May 9th M. A. Souqes and M. Janvier described the following typical case of the latter condition. A labourer, aged 40 years, who had not suffered from syphilis but was addicted to alcohol, came under observation. There was incipient bilateral pulmonary tuberculosis. The superficial veins of the lower limbs were symmetrically indurated. The internal saphenous vein could be palpated from the internal malleolus to the groin, and the external saphenous from the ankle to the thigh. These veins were smaller than normal, hard and resistant, and rolled under the finger like a cord. They were uniformly indurated without any nodulation. In the upper limbs the condition was also symmetrical. Almost all the superficial veins of the arms and forearms were indurated and presented the same characteristics as those of the lower limbs. The veins of the trunk, the neck, and the head were not affected. The induration appeared to have come on gradually and the patient was not aware of its existence. It had not caused any appreciable symptoms. The radial arteries were hard but the temporal arteries were not tortuous. The heart was normal and the urine did not contain albumin or sugar. This case is remarkable in consequence of the extent of the venous

induration, its perfect symmetry, its localisation in the superficial veins of the limbs, its latent character, and the obscurity of the etiology. M. Letulle, who has studied the anatomy of venous sclerosis in two cases, points out that the lesions differ from those of chronic phlebitis. The indurated vein is like a contracted artery, its lumen is narrowed and scalloped, and the folds formed by the thickened intima are free from clots. The pathology of venous sclerosis is obscure; some have suggested that it is similar to that of arteriosclerosis.

A MARRED LANDSCAPE AND A SULLIED AIR.

CEMENT works in many parts of our most picturesque country—for they are necessarily situated in river valleys—are defiling the air to an appalling extent. Plant life is suffering, tree foliage is being blighted, and the formerly charming vistas of vale and down are now frequently heavily curtained with a malodorous and noxious fume. The best examples of this vandalism occur perhaps along the valley of the Medway in one of the most delightful parts of the county of Kent and that part of it which was so dear to the author of the "Pickwick Papers." The locality of the mischief and offence is, of course, dependent upon the direction in which the wind is blowing. If there is little or no movement in the air the works themselves are buried in a sickly gloom. We cannot believe that this evil, which is assuming very wide-spread dimensions, is inseparable from the process or that it is not amenable to treatment. It used to be said that the smoky chimney of the factory was something that admitted of no remedy. We now know that by bringing a little pressure to bear upon the offenders the smoke nuisance has been very considerably diminished. We urge that similar pressure should be brought to bear upon the manufacturers of cement, for we are convinced that, like the smoke nuisance, the offensive fumes of the cement works chimney could also be effectually dealt with. Moreover, there is a provisional order in the Alkali Works Regulation Act of 1881 to the effect that an inspector may from time to time inquire whether in any works in which aluminous deposits are treated for the purpose of making cement—i.e., cement works—means can be adopted at a reasonable expense for preventing the discharge from the furnaces or chimneys of such works into the atmosphere of noxious or offensive gases. Judging from the numerous cement works throughout the country, all of which belch forth unchecked huge volumes of offensive fumes, it is evident that the provisions of this Act are not carried out, because, most probably, the manufacturer has persuaded the authorities that the expense of abolishing the nuisance would not be "reasonable." As is well known, cement is generally made by heating together lime and the mud of river estuaries. In this process there is, as might be expected, a considerable escape of malodorous organic fumes, besides sulphur dioxide and carbon monoxide arising from the coke, and immense quantities of coke are consumed for the purpose. Very definite and concerted action is wanted in this matter in order that this tremendous defilement and disfigurement may be stopped. It is only by vigorous action that manufacturers will be roused to give any attention to the possibility of providing means of abating the nuisance, but we feel sure that chemical engineering is not so backward as to be unable to afford a simple and comparatively inexpensive method of prevention.

A VOYAGE OF EXPLORATION.

IN a contribution to the *Archiv für Schiffs- und Tropen-Hygiene* Dr. F. Plehn relates his observations during a recent holiday trip through German East Africa. Owing to a famine which had been raging for three years the districts to the east and north of Tanga, towards Kilimandjaro, were almost entirely depopulated, the greater part of the villages being abandoned. The inhabitants were either dead or had fled for refuge to the coast. It would seem that famines are of frequent occurrence in German East Africa, but Dr. Plehn nevertheless believes in a prosperous future for the colony. What is needed is a system of artificial irrigation. In the elevated hinterland the vegetables of Europe all thrive wonderfully, producing several crops each year. The climate is highly salubrious, malaria being almost entirely unknown. Sites suitable for sanatoriums abound in every direction. Infectious diseases are seldom met with, always excepting small-pox which is endemic, affording a fine field for vaccination. In order to stamp out the disease Dr. Plehn recommends that regular supplies of lymph should be procured from the Hygienic Institute at Cairo, which is under the direction of a German—Professor Bitter. On his return journey Dr. Plehn halted for a time in Egypt in order to investigate the plague. At Alexandria he received valuable information from another German in Government employ—Dr. Gottschlich. According to this observer the mortality from plague is lower in Egypt than in India, not having exceeded 50 per cent. of cases treated. The pneumonic variety is much less fatal than elsewhere, fully one-third of the patients who suffered from it at Alexandria having recovered. Dr. Gottschlich succeeded in communicating plague to mice and rats by means of sputa taken from convalescent plague patients 70 days after their recovery. Dr. Plehn was greatly impressed by the zeal, activity, and intelligence of the medical officers belonging to the Egyptian sanitary department, most of whom, he says, are Germans or Swiss. It was owing to their untiring labours that the plague was prevented from spreading. Finally Dr. Plehn went to Rome to investigate malaria. Here he met Dr. Patrick Manson and became a convert to the mosquito theory. The objections to it which formerly seemed to him so fatal fell to the ground as though by magic before the explanations furnished by his English and Italian *confrères*.

WASTE WATER AND SEWAGE DISPOSAL IN JOHANNESBURG.

A REPORT has recently been presented to the municipality of Johannesburg by Dr. Charles Porter, the medical officer of health, detailing a temporary sewerage scheme for the disposal of slops, bath-water, and the like. There are in Johannesburg 9974 houses, nearly all of which are provided with some kind of receptacle into which slops are thrown and the bath-water is removed from 5900 houses. There appear to be no drain connexions to any dwelling-houses, but the receptacles are emptied and the bath-water is removed three times weekly into two- and four-wheeled tanks holding 400 and 600 gallons respectively, which are drawn by mules in some instances as far as two and a half miles to be emptied into a six-inch sewer which discharges some three and a half miles to the west of the town. There are at present carted daily in this manner about 55,000 gallons of slop-water and 36,000 gallons of bath-water at an approximate cost of nearly £50 or over £15,000 yearly. In addition some 75,000 gallons of waste water enter the main sewer by gravitation or by pumping from the hospital, gaol, and breweries. Dr. Porter estimates that within the next two years there will be about 212,000 gallons of waste water to be dealt with daily, and until a comprehensive system of sewerage is established he recommends the laying down of additional six-inch and twelve-inch sewers with a large number of depositing inlets constructed as lamp-holes or manholes and provided with tightly fitting covers perforated by a pipe with a stop-cock and a coupling to which a hose from the slop tank could be readily attached, thus allowing the contents of the tank

to be easily discharged into the sewer without any nuisance being created. The treatment of the sewage advised is by sedimentation in a tank of a capacity of 500,000 gallons, the effluent being treated either by irrigation or over bacterial contact beds. The total cost of the scheme is estimated by the acting town engineer at £50,000 and it could be completed in about nine months.

WE deeply regret to announce the death at the early age of 38 years of Dr. John Wichenford Washbourn, C.M.G., physician to, and lecturer on physiology and bacteriology at, Guy's Hospital. Dr. Washbourn was recently decorated for his services as consulting physician at the Imperial Yeomanry Hospital at Deelfontein and Pretoria. He was one of the most brilliant of the younger generation of London physicians and death cuts short a career of exceptional promise.

THE Midwives Bill was read for the second time in the House of Lords on Friday last, June 20th. Somewhat serious exception to the measure was taken by the Lord Chancellor and other peers, as will be seen from our report of the proceedings. It is probable, therefore, when the Committee stage is reached that efforts will be made to alter the Bill.

SANITATION AT THE COLONIAL NATIVES' CAMP, ALEXANDRA PARK.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE establishment of a camp for the colonial contingents on the grounds that surround the Alexandra Palace has given rise to sanitary difficulties presenting special and unusual features. So far as the Europeans are concerned, whether they come from Australia or Canada, their habits and customs are much the same and it is comparatively easy to provide for their needs. But with regard to the coloured natives of the various colonies very unusual requirements have had to be supplied. Thus the Mahomedans will not eat meat unless they have themselves killed the animal to be consumed. With the Indians they must not only kill, they must also themselves cook their food. But the slaughtering of cattle, especially in large towns, is of necessity subjected to certain sanitary regulations. Therefore it has been necessary to build two small slaughter-houses in the grounds. These consist of concrete flooring surrounded by a roofless wooded palisade. The floor is not level but slopes to the centre. After an animal has been slaughtered the concrete floor is scrubbed and washed and the blood and water gravitating to the centre drains into a corrugated iron tank which is sunk into the ground close to, but outside, the palisade. After these operations are terminated a portable pump is brought to the spot and the blood and water are pumped out of the tanks and conveyed away from the palace grounds. Near at hand there is another wooden shanty where the Indians cook the meat in artistically shaped brass saucepans which they place on small and slow fires lighted on the ground, thus preparing their food in their own manner. Very strict orders have to be given to prevent anyone entering, for the Indian will not eat food on which the shadow of the European has fallen. The Mahomedan is not so strict. He only insists on killing the sheep and allows the contractor to cook the meat; but a soldier accompanies the carcass to the kitchen and the cooks have to give their word of honour that they will not change the meat in the process of cooking. All this may seem peculiar, but from the sanitary point of view who shall say that it is not justifiable? Have not the discoveries of modern science, and especially of bacteriology, demonstrated the necessity of a strict inspection of our meat-supply? The Eastern peoples and the inhabitants of the desert have, in this respect, preceded us, and by many centuries.

Again, these coloured people give us a splendid example in respect to personal cleanliness. The Mahomedan may not pray unless he first washes himself, and the greater part of the coloured races, whether Mahomedan or otherwise, are very fond of a good sluice down. But here another difficulty has arisen. Many of these children of the forest or of the desert have no conception of a washing basin. A running brook or a pool of water is their nearest approach to a lavatory, and the idea of contenting themselves with a little water confined within the narrow limits of a basin is quite foreign to their nature. So it was necessary to imitate a running stream with a broad expanse of embankment where any amount of splashing could be allowed. Therefore first an open drain some 30 or 40 feet long was constructed, with a platform about five feet broad gradually sloping towards the drain. Above the drain there are numerous water-taps and tin pails. These latter are big enough for a man to stand in and have water over his ankles just as if he were bathing in a shallow brook. Then he can splash the water over himself and make a splutter to his heart's content. There are several such lavatories in the camp for the coloured contingents and their use has to be divided between the two great parties distinguishing one portion of the native contingents from the other. The first or most highly civilised section is known as the toothbrush party; the other section ignores this symbol of civilisation and does not wash its teeth. We have heard of Whigs and Tories; this, however, is our first introduction to the Toothbrush party.

The greatest difficulty of all, however, has been the providing of closets for the coloured contingent; and as they number some 550 men this was a serious matter. Being unfamiliar with so simple an article of toilette as the washing basin it would have been folly to expect them to understand the intricacies of a water closet with its two-gallon flush, its syphon water seal, and its tendency to get blocked when improperly treated. Therefore, Moule's patent hopper earth closets were provided. But this apparatus possessed all the attractions of a new-found toy. The simple and ingenious mechanism by which a handful of earth is made to fall into the pail was too much for the coloured contingent. Their zeal and love of cleanliness were so keen that they never left the closet till by repeatedly pulling the handle they had emptied out all the reserve of dry earth that the apparatus contained. Thus there was no more earth remaining for the next comer, and soon a nuisance was created. Ultimately the Moule's patent hopper closets had to be removed and they are now to be seen lying disused on the grass in rows like soldiers drilling. A simple metallic pail has been substituted and twice a day a fatigue party goes round and throws lime into all the pails. Once a day these pails are emptied out into larger iron tubs and carted away. This is not satisfactory. The iron tubs have been knocked out of shape and the lids no longer fit properly, so that the lighter particles may be shaken out of them in the course of removal. Proper pails are in use in many parts of the country, particularly for typhoid fever patients, to prevent their contaminating the closets, drains, and sewers. In Manchester, notably, the pail system used to be applied to the greater part of the houses. Over the lid of the pail there should be a bar fitting into a groove and on giving this bar a twist round the edge of the lid would be jammed down on to an indiarubber flange and thus the pail would be rendered air-tight. Such pails were in use in Manchester and could be conveyed through the streets without any risk or nuisance whatsoever. Then, again, the pail itself should be removed instead of being emptied on the spot into a larger receptacle. Every time this is done a certain amount of dust must be liberated and blown over the camp. It will be said that this is the fault of the contractor who has undertaken to do the work, but the British taxpayer pays for a sanitary military service which should attend to such matters instead of trusting to some outside contractor. How can a London contractor be expected to know what is necessary for a camp of coloured troops? Some of the military authorities would have preferred trough closets with water constantly running through. As it was necessary to lay a drain through the camp to carry away the slop water such closets might have been connected with this drain. It was, however, perhaps fortunate that this was not done, for the drain was at an early stage blocked and had to be dug up and relaid.

The greater part of the coloured contingent sleep in the banqueting hall. They have been amply provided with blankets so as to contend against a coldness of climate to which they are not accustomed. Their beds are certainly too close to each other, but this evil is perhaps sufficiently mitigated by the fact that the hall is some 40 feet high and the louvre windows in the roof are left open at night. Though their health has so far been well maintained,

still there have been some severe colds and there is one case of double pneumonia. Perhaps instruction should be given to the coloured men not to lie about on the grass; for in spite of fitful outbursts of sunshine the earth must retain much of the damp due to the recent heavy rains. Accustomed to hot climates these coloured men are in the habit of lying down on the ground and in the sun whenever they have any leisure. But in a damp, cold country and on a clay soil this practice is accompanied by a certain obvious risk. Notwithstanding, however, the bad weather prevailing during the earlier portion of the visit the coloured contingent seem in any case well satisfied with the attention and the compliments that they have received. It is true that Major E. Atkin, who helped very efficiently to organise their camp, has been a host in himself. His practical knowledge of native life in some of our colonies has stood him in good stead. He has ingratiated himself with the coloured races, knowing how to command and yet how to treat them as fellow-men and brothers. He is ever on the look-out to protect them from the gaping and ignorant rudeness of the Cockney sightseer and seeks to devise contrivances that shall satisfy their wants and harmonise with their customs. If from the political point of view it is important that these coloured fellow subjects should return to their native lands fully satisfied with the attention paid to them in this country, with the comforts they have enjoyed, and with the welcome that they have received, it is also quite clear that any great change in their mode of life and the accompanying dissatisfaction which it might cause would have a depressing effect and would render them all the more likely to contract those diseases incidental to their long journey and the rigour of our northern climate. Therefore it has been necessary to display more than usual organising faculty and forethought so as to prepare a suitable camp where men belonging to a great variety of races could live very much in their own way and yet not transgress any of the essential sanitary laws of this country. That this has been on the whole satisfactorily achieved speaks well for the tact and ingenuity of all concerned.

OBSERVATIONS ON DIET.

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IV.[1]—ANIMAL *versus* VEGETABLE DIET.

ANIMAL food is practically confined in this country to eggs, milk (with its derivatives cheese and butter), the flesh of certain mammals (e.g., the ox, sheep, pig, and rabbit), birds and fish (shellfish constitute quite a subsidiary source of food with us). Vegetable foods consist of the cereals (wheat, maize, rice, &c.), the pulses (peas, beans, &c.), the roots and tubers (carrots, potatoes, &c.), green vegetables and fruits (including nuts), and such derivatives of the vegetable kingdom as cane-sugar and starch (in the form of sago, tapioca, &c.).

The Composition of Animal and Vegetable Food Compared.

All the nutritive ingredients which go to make up a complete dietary—proteids, fats, saccharides,[2] extractives, and salts—are to be found both in the animal and the vegetable kingdoms; they differ, however, somewhat in the two kingdoms both in their composition and relative proportions, and I shall now consider some of the more important of these differences.

Proteids.—Vegetable proteids contain more carbon and less nitrogen than do animal proteids, and of them "nucleoproteids," now known to be a source of uric acid, constitute but a small proportion, a fact to be taken account of in connexion with the uric acid diathesis. But while differences undoubtedly exist between the proteids of the two great kingdoms, just as differences exist between the proteids of different foods belonging to the same kingdom (such as those of meat and fish), there is no reason to believe that vegetable proteids are, from the nutritive standpoint, in any way inferior to animal proteids. Nitrogenous equilibrium can be maintained as well on the one as on the other; nor should we expect to find it otherwise, since the vast majority of animals—many of them endowed with great vitality—are dependent for their proteids upon the vegetable world, while the earliest and most primitive forms of animal life must have derived their proteids from this source alone. Vegetable proteids, at all events when taken in their natural associations, are, however, not so completely absorbed as are animal proteids, and therefore, if all the proteid is to be derived from the vegetable kingdom, need to be taken in larger amount. Thus it has been shown that while only 2·3 per cent. of the proteids in meat escape absorption, no less than 30 per cent. of those in lentils fail to be absorbed.[3] This defective absorption of the vegetable proteids may possibly be due to their large admixture with starch, cellulose, and such-like substances; whether they are more readily absorbed when separated from their natural associations has not, so far as I know, been tested.

Animal and vegetable foods differ greatly in regard to the relative amount of proteid which they contain, the former being much the richer in this ingredient. Thus about one-third of cooked meat and one-third of cheese consist of proteid, the proportion in fish being somewhat less; eggs contain about 13 per cent. On the other hand, vegetable substances, if we except nuts which contain from 15 per cent. to 20 per cent., contain a comparatively small percentage. Bread, e.g., which for a vegetable food is rich in this substance, contains only 6·5 per cent., while green vegetables and fresh fruits are almost devoid of it. The following gives the percentages of proteid in some of the commoner varieties of vegetable foods: Nuts, from 15 to 20; bread, 6·5; boiled rice, 5; dried figs, 5; dried dates, 4·4; cooked haricots, 4·4 (uncooked haricots, 23); peas, 4; prunes and raisins, from 2 to 5; boiled artichoke, 2·3; bananas, from 1 to 5; boiled scarlet runners, 1·7; boiled potatoes, 1; fresh fruits, 0·5; green vegetables, less than 1; cooked beetroot, 0·44; boiled turnips, 0·32; and boiled parsnips, 0·22.

By artificial means both vegetable and animal proteid can be obtained in a concentrated form. Thus aleuronat contains 80 per cent. of the vegetable proteid gluten, and plasmon 70 per cent. of the animal proteid casein.

Fats.—Vegetable fats, in the form of "albene," "nucolene," and olive oil, are as nutritious as butter and other animal fats; but though fat is abundant in such articles as nuts, olives, and oats, vegetable food is, on the whole, comparatively poor in it, many vegetable foods—e.g., rice, potatoes, the pulses, fruit, and green vegetables—being practically devoid of it. We, indeed, depend chiefly upon the animal kingdom for this important constituent of our diet, though one does not see why vegetable fats should not be more employed in the future than they have hitherto been. Various preparations of fats are made from nuts, some of which are said to afford good and cheap substitutes for cooking-butter. When we reflect that sweet almonds contain 54 per cent. of fat, dried walnuts 62 per cent., and dried filberts actually 66 per cent., it is obvious that the vegetable kingdom contains vast stores of fat; and, inasmuch as vegetable fat is cheaper than animal fat and equally nutritious, it is to be hoped that these may be drawn upon in the future more than they have been in the past.

Saccharides.—Under this term I include both starch and sugar. These substances are very sparingly represented in the animal kingdom. Saccharide is present in milk in the form of milk sugar, of which cow's milk contains some 4·5 per cent., and in the flesh of animals, as glycogen, but in quantities so small as to be practically negligible; vegetable foods, on the other hand, are rich in saccharide and constitute the essential source whence we derive it. The following gives the percentages of saccharide in some of the more important vegetable foods: Bread, 51; boiled rice, 41; banana, 22; cooked haricots, 21; boiled potato, 19; nuts, 10; and fresh fruits, from 5 to 10. Such artificial foods as tapioca, sago, arrowroot, cornflower, and mazena may be regarded as saccharide pure and simple.

Extractives.—Extractives are abundant in both animal and vegetable foods, but especially in the former, the extractives and the salts in the lean of meat constituting by weight as much as one quarter that of the proteids present. Fish, on the other hand, is comparatively poor in extractives. Of the exact nature of these substances little is known. We know, however, that animal extractives are largely made up

[1] Nos. I., II., and III. were published in THE LANCET of May 24th (p. 1486) and 31st (p. 1554), and June 14th (p. 1712), 1902, respectively.
[2] I use the term "saccharide" synonymously with "carbohydrate."
[3] Robert Hutchison: Food and Dietetics, p. 164.

of broken-down proteid—that they are nitrogenous waste products, in fact. Both classes are stimulating alike to gastric digestion and the nervous system generally, but this is especially true of the extractives of meat, which not only constitute the most powerful known excitants to gastric secretion but may so act upon the brain as to cause actual intoxication. The different stimulating power of such foods as butcher's meat, fish, cheese, oats, maize, hay, though partly due to the varying amount of proteid which they contain, is, I believe, chiefly to be explained by reference to the kind and quantity of their extractives, for it varies quite irrespectively of the amount of proteid present in them. Fish and cheese, which are poor in extractives, are much less stimulating than is meat; oats have, as is well known a peculiarly stimulating effect on horses.

Salts.—Vegetable foods contain more alkali than do animal foods and are especially rich in potassium; animal foods, on the other hand, contain more sodium and lime. It is especially in green vegetables, potatoes, and fruit that potassium is found; it is less abundant in the cereals and the pulses, both of which are, however, rich in lime. Vegetable foods are abundantly supplied with vegetable acids, all of which are oxidised in the body into carbonates, and these, uniting with an alkaline base, pass out by the kidneys, thus rendering the urine alkaline. This is the effect of most vegetable foods, animal food, on the contrary, tending to increase the acidity of this excretion. The cereals and pulses, owing to their deficiency in vegetable acids and their richness in lime, tend to act like animal food in this respect and to increase acidity. Acids develop in meat on hanging and are abundant in the flesh of hunted animals. These acids, like the extractives of meat, stimulate gastric digestion.

Not only do vegetable foods differ from animal foods in regard to the nature and proportion of their nutritive constituents but also in being more bulky. This bulkiness of vegetable food is partly due to its wateriness, which is still further increased by cooking; partly to the fact that saccharide, of which vegetable food is chiefly composed, is two or three times more bulky than its dynamical equivalent of proteid or fat; and partly to the presence of undigestible cellulose. This substance is itself a saccharide and, unlike the herbivora which are provided with special means for converting it into soluble saccharide, man has no power of digesting it, such disintegration as it suffers in his alimentary tract being brought about by bacterial action with the formation of simple chemical substances having no nutrient value.[4] Some vegetables, such as cabbage, consist of little more than cellulose, water, and salts, and are practically valueless as sources of energy. Now the vast stores of starch contained in the vegetable kingdom are all imprisoned in cellulose compartments, and for this reason the starch in raw vegetable food, unless this is subjected to prolonged mastication, so as to break up the cellulose framework, is of little nutritive value to man. Judge, then, how greatly he increased his supply of nutriment by the discovery of cooking, for by its means the starch granules are made to swell up and burst their cellulose prisons, the starch thus liberated being freely digestible by man.

The Effect of Animal and Vegetable Foods Broadly Contrasted.

Though "animal food" includes fish, fowl, eggs, and milk, as well as butcher's meat, many when told not to eat too much of it think it sufficient merely to curtail their allowance of "meat," an entirely inadequate measure and founded on an erroneous idea of what animal food includes, seeing that an excess of fish, or fowl, may be quite as injurious as an excess of meat. In what follows "animal food" must be taken to include fish, flesh, and fowl, but especially the latter two, milk and eggs being left out of consideration. On the other hand, vegetable food must be taken to mean the ordinary vegetable produce consumed by the strict vegetarian, and not this diet fortified by vegetable proteid artificially isolated.

Vegetable food by reason of its bulkiness is apt to distend and permanently to dilate and lengthen the alimentary canal; it also puts more work upon the digestive organs than does animal food, and diverts a corresponding amount of blood and energy from other parts whose efficiency is to this extent impaired. This is one reason why the vegetarian is apt to show less energy than the animal feeder or the mixed feeder. The bulkiness of a purely vegetarian diet, its comparative non-absorbability, and the presence in it of the highly fermentable ingredients have the further effect of stimulating peristalsis and of causing the fæces to be far more abundant than is the case with a purely animal diet. Vegetable food is more liable to ferment and produce flatulence than is animal food, an additional reason why it should cause distension of the primæ viæ; on the other hand, vegetable food, unlike animal food, is incapable of undergoing putrefaction. Animal food, while putting less mechanical work upon the stomach than vegetable food, is at the same time far more stimulating to the gastric glands, owing to its richness in proteids, acid salts, and energising extractives, and it is largely owing to this local effect on the stomach that it is more satisfying and stimulating than vegetable food.

We have thus far dealt with the local effects on the alimentary canal of the two classes of diet; let us now compare their effects after absorption.

Animal food, containing as it does more proteid than does vegetable food, is more stimulating to metabolism, for not only are proteids rapidly katabolised, but they cause a sympathetic augmentation in the katabolism of saccharides and fats.[5] It is for this reason that an animal diet makes for leanness; vegetable food, on the other hand, owing to its richness in saccharides favours the deposit of fat and, unlike animal food, causes a wateriness of the tissues, so that while animal feeders tend to be lean and hard, vegetable feeders are apt to be fat and flabby. Animal food, possibly owing to the large amount of urea to which it gives rise, causes an abundant flow of urine; vegetable diet has the opposite effect, and this probably explains why the tissues are drier on the former than on the latter diet; animal food promotes the acidity of the urine, while most vegetable foods tend to render this fluid alkaline, the exceptions being the cereals and pulses which have rather the opposite effect.

The nervous system appears to need for its highest manifestations a rich supply of proteid; this withheld, "nervous energy" or "go" flags. After a meal of meat an individual is more lively than after one of vegetable food in which there is a dearth of proteid, the stimulating effect of the proteids of the meat being further enhanced by the similar effect on gastric digestion and on the system generally of the extractives in which meat abounds; I would suggest that the waste products of proteid katabolism have also a stimulating action. Vegetable food, on the other hand, is not only apt to be deficient in proteid but contains comparatively few stimulating extractives; the large demands its bulk makes upon the digestive organs tend, moreover, to induce lethargy.

Hutchison[6] lays stress upon the difference in energy shown by the animal and vegetable feeder, comparing the restless tiger, ever ready to pounce upon its prey, with the placid ruminant dreamily chewing the cud. Nevertheless, the purely vegetable-feeding animal is by no means always lacking in nervous energy. Witness the fierce energy displayed by the wild boar and the gamecock even though confined to a strictly vegetable diet; again, what animal shows more "nervous energy" than a thorough-bred, which, moreover, is probably capable of greater endurance than any of the carnivora. In fact, the herbivora are, on the whole, far more enduring than the carnivora by reason of the large amount of food they consume in the form of saccharide. Nor must the energetic nature of the carnivora be attributed solely to their diet; living, as they do, on other animals they are compelled to hunt and fight and kill, and thus by the survival of the fittest the fiercest and most aggressive tend to survive. I do not, of course, contend that a diet of flesh, especially butcher's-meat and bird, does not tend to excite the nervous system; there can be no doubt that it does; dogs fed on meat only are fiercer than are those which are mixed feeders. In irritable states of the nervous system much good may often be done by de-animalising the diet, and it is certain that flesh-eating communities display more energy than do those which are wholly, or almost wholly, vegetarian. I merely wish to emphasise the fact that a high degree of energy is not the exclusive prerogative of the flesh-eater.

The Comparative Suitability of Animal and Vegetable Diet.

How far is man adaptable to an animal, a vegetable, or a mixed diet? It is needful for the physician to study the

[4] The latest investigations tend to show that man is incapable of deriving any nutriment from cellulose.

[5] Physiologists do not appear to offer any explanation of this.

[6] Op cit., p. 169.

question in all its bearings. Some have argued that man is by nature essentially a vegetable feeder on the ground that he is descended from an ape-like creature and that all apes are vegetable feeders. But, as a matter of fact, the anthropoid apes, man's nearest relatives, are by no means wholly vegetarian; they devour many kinds of animals and subsist largely on birds and bird's eggs. Moreover, the digestive system of man, including his teeth, to say nothing of his instinct to kill, proclaims him to be largely carnivorous; and, in fact, all the evidence goes to show that he is naturally more of a carnivorous than a vegetable feeder. As one writer puts it: "Man is carnivorous. It is his misfortune, but it is so." One would willingly think otherwise, for who can contemplate with equanimity the wholesale slaughter of animals, with all its gruesome accompaniments, in order that we may feed on their flesh? But facts have to be recognised.

But while man is carnivorous he is also herbivorous—i.e., he is by nature omnivorous, a mixed feeder. Some races subsist solely on animal, others solely on vegetable, food, but taking the whole world over it is found that man thrives best on a mixed diet—i.e., experience, which is in the last resort the only reliable test, confirms the conclusion derived from ancestral and anatomical considerations, and the accumulated experience of many countries through many ages goes to show that man thrives best on a dietary in which proteids, fats, and saccharides bear a certain proportion to one another. Now this proportion cannot be obtained on a purely animal diet or on a purely vegetable one unless fortified in a manner to be referred to presently. In the former case a quantity of proteid greatly in excess of his requirements has to be consumed in order to secure the necessary quantity of carbon, and in the latter the needful quantity of nitrogen can only be obtained by consuming an excess of saccharides and cumbering the alimentary tract with a large mass of food, which is objectionable not only for mere mechanical reasons but on account of the enormous demands it makes upon the digestive system, to which it diverts a large amount of blood and energy which might be employed elsewhere. These difficulties are got rid of by combining animal and vegetable food so as to secure a proper proportion of the various nutritive ingredients, that proportion being obtained by taking about one of the former to two of the latter. If the diet be either too much animal or too much vegetable certain evils result. These we will now consider.

Evils resulting from a too highly Animal Diet.

In the following remarks I shall exclude from consideration milk, butter, cheese, and eggs, all of which, however, strictly speaking, come under the category of animal food.

The evils resulting from a dietary containing an excess of fish are not so pronounced as are those resulting from one comprising too much "meat" or bird, and in practice we are much more concerned to keep down the consumption of these than of fish. This suggests that it is not so much an excess of proteid which is injurious as of the associated extractives, a conclusion which is supported by the fact that the troubles which result from an excess of bird are not quite the same as those resulting from an excess of meat. Nevertheless, there can be no doubt that an excess of the proteids themselves, especially, perhaps, of the nucleo-proteids, causes injury by casting an abundance of nitrogenous waste products upon the circulation.

The effect of a highly animal diet depends among other things upon idiosyncrasy, age, and habit of life. Some are by nature so constituted that they can consume an abundance of animal food—meat, for instance—without apparent harm, while others become gouty and "rheumatic" on a comparatively small quantity of it. Age has a decided influence. Thus a superabundance of meat is perhaps apt to disagree during the early years of life; during the subsequent years of growth and development a highly animalised diet is better borne than at any other period; after middle life the evils resulting from consuming an excess of animal food, especially meat, increase year by year and it is certain that the aged should partake of it very sparingly. Nothing, indeed, better attests the evil effect of an excessive meat diet than its influence upon length of life. Butchers are as a class short-lived, and Humphry has shown that the majority of centenarians are moderate meat-eaters.

But the effect of a highly animalised diet depends more than anything else upon whether a sedentary or an active life is being led; the more active the life the larger is the amount of animal food that can be taken with impunity, an active life promoting oxidation and the elimination of waste products. It should be remembered that all the purely carnivorous animals are necessarily highly active, since they have to hunt for their prey, and it is a noteworthy fact that such races among men as are purely carnivorous lead highly active lives. Thus the Pampas Indians, who subsist for months together entirely on flesh, spend most of their time in the saddle, and it is only under conditions of this kind that a purely animal diet can be tolerated. Those leading inactive lives are necessarily injured by such a diet, a statement which is true of carnivorous animals as well as of men; it is well known that a dog that is kept about the house and not allowed plenty of exercise gets ill if its diet is restricted to meat.

The moral of all this is that the inactive should not allow the proportion of animal food which they consume to be too high; though curiously enough they are less able to tolerate a purely (unfortified) vegetable diet than are those leading active and laborious lives, it being more difficult for them to burn off the large amount of saccharide which such a diet must necessarily contain if they are to secure the proper proportion of proteids. It is true that a person may for a time thrive on a purely meat diet even while resting in bed, especially if a large quantity of water be taken with it so as to aid the elimination of the extractives and waste products; the digestive system, relieved of the necessity of coping with the starchy and other ingredients which a mixed diet entails, may be benefited by this plan of treatment. But such a diet can rarely be continued beyond a few weeks without doing injury unless a highly active life be led.

In this country most people except the poor tend to eat too much animal food.

The Evils of a Diet which is too purely Vegetable.

While it is certain that health can be maintained on a purely vegetable diet it is very doubtful whether such a diet unless selected upon a special plan will allow of the attainment of the fullest vigour of mind and body. Unless most carefully chosen it is apt to be unduly bulky and so to make an undue demand on the digestive powers, thereby diverting to them too large a proportion of the total energy of the organism. When we add to this the facts that a vegetable diet is apt to be deficient in proteid and that stimulating extractives are poorly represented in it, it is not surprising that the pure vegetarian is apt to lack energy; he is, moreover, prone to obesity and apt to offer a low resistance to disease.

Vegetable food has, further, a tendency to ferment and thus to add to the distension caused by mere bulk. This is especially the case with the potato, green vegetables, and pulses; the large starch granules of the potato appear to be very susceptible of fermentation, while the sulphur which is abundant in the pulses, especially beans, predisposes to the formation of SH_2; peas contain less sulphur and are less apt to cause flatulence, and lentils still less so. In regard to green vegetables it should be remembered that the fresher they are the less are they liable to ferment; hence the great importance of eating them fresh; unfortunately the early stages of decomposition are not so evident in the case of vegetable as of animal matter. Some have contended that the pulses, containing as they do a large quantity of lime, predispose to atheroma and that communities that subsist largely on them are especially prone to this disease, but the evidence in favour of this statement is slender.

Inasmuch as the cereals and the pulses, unlike other vegetable foods, tend to increase urinary acidity and to conduce to general acidity they may favour gout and "rheumatism." Haig traces the rheumatism met with among the natives of India to the fact that they live largely on these articles of diet. Acid fruits, such as strawberries, may set up joint-pains in the rheumatic and gouty, but all vegetable acids are oxidised in their course through the body into carbonates, which after uniting with potassium and sodium are secreted by the kidneys, thus tending to diminish the acidity of the urine. Again, sugar is in some prone to undergo acid fermentation in the stomach and, like acid fruits, is by some physicians proscribed in rheumatism and gout, but the acidity produced by acid fruits and sugar is less apt to arise on a purely vegetable than on a mixed diet, and it is chiefly, therefore, as part of this latter diet that we need to proscribe them.

Vegetable Diet fortified by Vegetable Proteid.

When we reflect that the vegetable kingdom contains all the individual food-ingredients needful for life, and that the inferiority of a purely vegetable dietary is essentially due to its bulkiness and lack of proteids, the question naturally occurs whether it would not be possible to isolate a pure vegetable proteid (just as we separate casein from milk) and by adding it to vegetable food—e.g., wheaten flour—secure a food which should contain proteid in the needful proportion and at the same time not be too bulky. This would dispense with the necessity of overloading the system with saccharide. Such a substance has been prepared from the gluten of wheat, and is known as "aleuronat," and by fortifying wheaten flour with it a bread can be obtained which, with the addition in proper proportion of vegetable fat, constitutes a diet in which all the foodstuffs are presented in the needful proportions. This is the direction in which the consistent vegetarian must look, and I personally can see no reason why his dream should not be realised. Another way of obtaining the necessary proteid in a compact form is by means of preparations obtained from nuts. Thus Fromm's Extract, obtained by crushing nuts and removing the excess of cellulose and oil, contains 22 per cent. of proteid, 31·6 per cent. of fat, 8 per cent. of saccharide, and 12·8 per cent. of mineral matter.[1] I do not see why food of this description should not have a great future before it.

There are those who make light of vegetarianism and regard its votaries as mere cranks, they point scoffingly to the great difference between the stomach of the ox and of man, and say that it is absurd to suppose that man, like that animal, can subsist on a vegetable diet; but no reasonable person has ever contended that man can subsist on the diet of the ox; this is manifestly impossible since he is, as we have seen, incapable of digesting cellulose. They conveniently ignore the fact that the vegetable food which man consumes is totally unlike that which forms the food of the ruminant: in the first place, man has by cultivation profoundly modified vegetable food, such as wheat, rice, beans, the potato, the date, and the fig, for his own use, and thus has obtained the food ingredients in a concentrative form; and this concentration he has carried a step farther by milling, grinding, and other means whereby the indigestible portions are separated from the digestible. Nay, more than this, he has actually wrested from the vegetable kingdom the various nutritive ingredients—starch, sugar, fat and proteid, in their pure, or almost pure, form; and when to these facts is added the further one that he has been able greatly to increase the digestibility of vegetable substances by cooking and artificial digestion the speciousness of the comparison between man and the ruminant becomes apparent. Even the carnivorous dog, which is totally incapable of subsisting on the food of the horse or the ox, can freely digest sugar, starch, and other food ingredients which man has cunningly extracted from the vegetable world.

Vegetable Diet fortified by Eggs and Milk.

Hitherto the so-called vegetarian has obtained the needful supply of proteid from milk and eggs; cheese contains, weight for weight, more proteid than meat; from the casein, moreover, plasmon and protene, now largely used in the sick room, are prepared; the latter is sold as protene flour from which protene bread is made, a food which with the proper proportion of butter, another derivative of milk may to made to contain the three great food-stuffs, proteids, fats, and saccharides, in the proportions needful for health. Fat being a highly concentrated form of food, and the vegetable world yielding few fats, such as olive-oil, which can be taken with relish in any quantity, the butter, like the cheese obtained from milk, enables the bulk of vegetable food greatly to be reduced.

Milk and eggs, however, are animal foods and the same sentimental objection which attaches to the eating of flesh attaches to their consumption also. I am not going to advance in support of this statement the spurious argument put forward by some to the effect that those who object to kill in order to obtain food should not, to be consistent, eat eggs, on the ground that they are really alive and are capable of developing into individuals. The subject should not be approached in any narrow, carping spirit, but seriously, reverently. The vegetarian is against killing something which has *lived and felt*. The argument I am going to use is a much more weighty one—i.e., that the consumption of milk and eggs necessitates a wholesale killing, for in order that a farmer may get a profit on his eggs and milk, he has to kill off a large number of cocks which yield no eggs and bulls which give no milk. If he reared them all and allowed them to die a natural death, not only would his farmyard be a perfect pandemonium, but his expenses would be such that in order to sell his eggs and milk at a profit he would need to demand a prohibitive price. It follows that those who consume these articles, though they do not eat flesh, are yet accessory to the slaughter of animals.

[1] Hutchison, op. cit., p. 201.

UNIVERSITY OF OXFORD: DECREE AND REGULATIONS FOR THE READERSHIP IN OPHTHALMOLOGY.

IN a Convocation holden on Tuesday, June 17th, 1902, the following decree and regulations were approved:—

DECREE AS TO READERSHIP IN OPHTHALMOLOGY.

Whereas Margaret Ogilvie, widow, has offered to the University a capital sum which will provide not less than £200 a year for the endowment of a university reader in ophthalmology;

And whereas it is the intention of the said Margaret Ogilvie, primarily to encourage the prosecution of original research in ophthalmology, and, secondarily, to provide instruction—by means of lectures (clinical and systematic) and demonstrations—in diseases and defects of the eyes and their treatment, for members of the University and for legally qualified members of the medical profession;

The University accepts the offer, approves of the regulations made in that behalf, and hereby records its gratitude for Mrs. Ogilvie's munificence.

REGULATIONS FOR THE READERSHIP IN OPHTHALMOLOGY.

1. The annual income of the readership endowment shall be applied in and for the encouragement of original research in ophthalmology and also for providing at the Oxford Eye Hospital ordinarily, and elsewhere in Oxford when expedient, instruction in the nature and treatment of eye diseases and defects for members of the University and for members of the medical profession.

2. If and so long as the Hebdomadal Council shall be allowed to nominate three members of the board constituted for electing the senior honorary surgeon to the Oxford Eye Hospital, the said surgeon shall be appointed and designated the Margaret Ogilvie's Reader in Ophthalmology. Three-fourths of the net annual income from the endowment shall be paid to the reader; and one-fourth shall be applied under his direction in providing such assistance in the pathological department of the hospital and such apparatus and museum requisites as he may consider necessary.

3. The electoral board hereinbefore referred to shall consist of—(*a*) The vice-chancellor; (*b*) the chairman and the vice-chairman of the Oxford Eye Hospital; (*c*) the treasurer of the Radcliffe Infirmary; (*d*) the regius professor of medicine in the University of Oxford; (*e*) the President of the Royal College of Surgeons; (*f*, *g*, *h*) three members nominated by the Hebdomadal Council on each occasion.

4. The lectures to be delivered by the reader shall not be less than 12 during the University academical year: that is to say, four in each term (Easter and Trinity terms being counted as one); at least six of the lectures shall be systematic and the remainder may be clinical.

5. If during any year that shall expire on the first day of September the reader shall have failed to reside 30 weeks within one mile and a half of Carfax, he shall cease to hold his readership, but shall not on that ground be incapable of re-election.

6. If the reader ceases to hold the appointment of honorary surgeon to the Oxford Eye Hospital he shall thereupon cease to hold the readership.

7. A reader who has reached the age of 60 years shall cease to hold the readership. But the electoral board shall have power to re-elect him, if they think fit, for a further period not exceeding five years.

8. If the senior honorary surgeon to the Oxford Eye Hospital ceases to hold the readership, no election of a reader shall be held so long as he shall be surgeon, and the income arising from the trust fund during the vacancy of the readership shall be invested in augmentation of the capital of the trust.

9. The amount which may accrue from the accumulation of income during any abeyance of the readership shall be invested, and the annual income thereof shall be applied to the furnishing of apparatus and diagrams and other requisites for research in ophthalmology and for purposes of instruction.

10. The reader shall be entitled to require from medical students a fee not exceeding two pounds for any University term, but no fee shall be payable by any registered member of the medical profession.

11. The reader shall submit annually at the commencement of the University academical year to the board of the Faculty of Medicine a brief report detailing the original research conducted by him during the 12 months immediately preceding.

12. The reader shall be subject to the jurisdiction of the visitatorial board.

13. Robert Walter Doyne of Keble College, F.R.C.S., honorary surgeon to the Oxford Eye Hospital and honorary consulting ophthalmic surgeon to the Radcliffe Infirmary, shall during his tenure of the first-named appointment be constituted the first Margaret Ogilvie's reader in ophthalmology.

14. The collection of preparations and drawings illustrating the pathology of the eye, presented by Mr. Doyne as a further endowment of the readership shall, together with any future additions thereto, be under the charge of the reader. This collection, together with all collections, preparations, drawings, and apparatus purchased out of the

income of the Ogilvie Trust Fund, shall be the property of the University. The expenses connected with the maintenance thereof shall be defrayed out of the income of the trust fund.

15. The trust fund shall be transferred to the curators of the University chest and the capital thereof invested by them in the name of the chancellor, masters, and scholars of the University.

16. These regulations shall be subject to alteration by Convocation at any time with the consent of the donor during her lifetime; provided that the main object of the foundress as set forth in the decree be always had regard to.

CHARING CROSS HOSPITAL: MASONIC CEREMONIAL.

ON Friday, June 20th, the foundation-stone of the addition to Charing Cross Hospital was laid by H.R.H. the Duke of Connaught, K.G., Most Worshipful Grand Master of the United Grand Lodge of England, with full Masonic ceremony in the presence of H.R.H. Princess Louise, Duchess of Argyll, President of the hospital, and a large and distinguished company of guests.

On arrival His Royal Highness was received by the President of the hospital and a deputation of grand officers. A deputation of the Council of the hospital was then presented to His Royal Highness. After the presentation the Grand Master and the grand officers in attendance, wearing their Masonic clothing, entered the pavilion in procession in the following order: the Deputy Grand Director of Ceremonies (Mr. E. Armitage), three Masters of Lodges (including Dr. John Abercrombie, Master of the Chère Reine Lodge) bearing the cornucopia and ewers with wine and oil, two Grand Deacons (Mr. Thomas Wakley, jun., and Mr. Henry Grey), the Grand Superintendent of Works (Mr. H. L. Florence) with the mallet, the President of the Board of Benevolence (Mr. J. H. Matthews), the Grand Secretary (Mr. E. Letchworth) with the plate, the President of the Board of General Purposes (Mr. R. Loveland Loveland, K.C.), the Grand Registrar (Mr. J. Strachan, K.C.) bearing the great seal, the Grand Treasurer (Captain J. Barlow) bearing a phial containing the coin to be deposited in the stone, the Junior Grand Warden (Major-General the Hon. H. F. Eaton, C.B.) with the plumb rule, the Senior Grand Warden (the Earl of Donoughmore) with the level, the Grand Chaplain (Canon Quennell) bearing the Sacred Law on a cushion, the Deputy Grand Master (the Earl of Warwick) with the square, the Grand Sword Bearer (Major-General Astley Terry), the Most Worshipful the Grand Master H.R.H. the Duke of Connaught, K.G., and two Senior Grand Deacons (Mr. C. N. P. Phipps and Dr. A. E. Sansom). Her Royal Highness the Princess Louise, Duchess of Argyll, President of the hospital, then addressed the Grand Master and requested His Royal Highness to lay the foundation-stone according to Masonic form. The Grand Master said he would be happy to comply with Her Royal Highness's request; the vessels of corn, wine, and oil were deposited on a pedestal placed for their reception, and the upper stone having been raised and the lower one adjusted the Grand Master addressed the assembly, after which the Grand Chaplain offered a prayer. The Grand Secretary next read the inscription on the plate and the Grand Treasurer deposited the phial containing the coins. The cement was spread on the upper face of the lower stone and the M.W. the Grand Master adjusted the same with a trowel handed to him for the purpose, after which the upper stone was slowly lowered with three distinct stops. The Grand Master then proved the just position and form of the stone by the plumb rule, level, and square, which were successively delivered to him by the Junior Grand Warden, the Senior Grand Warden, and the Deputy Grand Master. Being satisfied in these particulars His Royal Highness gave the stone three knocks with the mallet which was handed to him, saying: "I find this stone to be plumb, level, and square, and I declare it to be duly prepared and truly laid and that the craftsmen have worked well." The cornucopia containing the corn and the ewers with the wine and the oil were next handed to him and the Grand Master strewed the corn and poured the wine and the oil over the stone with the accustomed ceremonies. The architect was presented to the Grand Master and delivered to His Royal Highness the plan of the intended building. The Grand Master having inspected the plan returned the same to the architect, together with the several tools used in proving the position of the stone, and desired him to proceed to the completion of the work in conformity with the plan, after which the Grand Chaplain pronounced a blessing.

Mr. DRUMMOND, the treasurer of the hospital, in moving a vote of thanks to His Royal Highness, referred to the facts that some 70 years ago the foundation-stone of the old building was laid with a similar ceremony by the late Duke of Sussex, that the late beloved Queen Victoria throughout her long life had shown a deep interest in the hospital (in fact, they possessed the first Victoria Ward of any hospital), and that for about 20 years the late Duke of Edinburgh had been their President, and by his efforts in promoting the success of the bazaar at the Albert Hall had enabled the committee to commence the new building. They required £80,000 to complete the work. As treasurer he was bound to make the customary appeal, but the public having been so generous to them in the past he and the rest of the committee looked forward to the future with the greatest confidence. In commemoration of that day they asked His Royal Highness graciously to be pleased to name one of the new wards.

Sir JOSEPH FAYRER, in seconding the motion on behalf of the medical staff, referred to the vast benefits that were conferred by hospitals on every member of the community, from His Majesty the King on the throne down to his meanest subject, and touched on the special service rendered by Charing Cross Hospital.

The DUKE OF CONNAUGHT, who was received with enthusiasm, said that he was indeed very sensible of the kind words which had fallen from Mr. Drummond and Sir Joseph Fayrer and that it required no vote of thanks for him to assure them of the very great pleasure with which he attended that day in compliance with the wishes of his beloved sister, their President, to lay the foundation-stone of the new buildings with full Masonic honours. Speaking in the name of the Grand Lodge and of all Masons—a large and influential body of His Majesty's subjects—he assured them that they very much appreciated the opportunity of performing the ceremony and of, if possible, raising their opinion of Freemasons and enabling them to see what a loyal body of men English Freemasons were. He trusted that the ceremony had interested those who perhaps for the first time had witnessed it. He alluded to the close connexion which members of his family had had with Charing Cross Hospital and hoped and believed that now, under the presidency of his sister, Princess Louise, it would flourish in the manner they would all wish it to do. Their beloved Sovereign the King had for many years taken a deep interest in everything connected with the hospitals of this metropolis and had made every endeavour to promote and to increase the funds necessary for the working of these most important but very expensive institutions. His Royal Highness concluded by saying that he hoped that the new extension, the foundation-stone of which he had that day had the great pleasure of laying, when completed would make Charing Cross Hospital one of the finest and most complete of the splendid hospitals of which they were all so proud in this great city. He thanked them for their kind vote of thanks.

The M.W. Grand Master then said that he should like to name the new ward the "Alfred Ward" in memory of his dear brother, but on being subsequently informed that there was already an Alfred Ward in the hospital he rose again and said that in that case, although it had been suggested that it might be called the "Duke of Edinburgh Ward," he thought that everyone present would agree that there could be no more appropriate name than the "Louise Ward"—a pronouncement which was received with much applause.

It may be interesting to record that the mallet used by His Royal Highness in the ceremony was the one used by Charles II. in laying the foundation-stone of St. Paul's Cathedral. It was subsequently presented by Sir Christopher Wren to the Lodge of Antiquity, of which he was Worshipful Master. On the present occasion it was specially lent by the Lodge of Antiquity for use by the M.W. Grand Master. Before and after the ceremony the band of the Royal Marine Light Infantry supplied a pleasing programme of music.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. von Boehm, formerly Director of the General Hospital, Vienna, at the age of 75 years.—Dr. Polaillon, the well-known surgeon of the Hôtel Dieu in Paris, at the age of 66 years.—Dr. Ferdinand Sommer, formerly Professor of Anatomy in the University of Greifswald. His published papers dealt mainly with zoological matters and the anatomy of the lower animals.

Looking Back.

FROM

THE LANCET, *SATURDAY, JUNE 26*, 1824.

ARTIFICIAL CASTOR OIL.

One drop of the oil of Croton, mixed with an ounce of the Oleum Papaveris forms a preparation very nearly resembling castor oil, and a table-spoonful of one will produce the same effects as a table-spoonful of the other. The mixture has been used with great success in our hospitals, and, as castor oil is so dear, we strongly recommend the general adoption of this substitute.—*Hufeland's Journal der Practischen Heilkunde.*

Vaccination.—On the 14th ult. the physicians of Berlin celebrated, as they have done for these fourteen years past, Dr. Jenner's grand discovery of vaccination. From the lists sent to the Society from all parts of the kingdom, it appears that the number of individuals vaccinated last year was 330,905.—The number would probably have been 360,000 if the lists had been complete.

The newly invented apparatus kept at the infirmary for extracting poisons from the stomach, was used for the first time in this town on Friday last. Laudanum had been taken, for the purpose of self destruction; the usual emetics had been administered without any effect, as is frequently the case under similar circumstances, in consequence of the insensibility produced by the poison. The laudanum was extracted, by first forcing a quantity of warm water into the stomach, and then immediately withdrawing the whole contents by means of the new instrument.—*Derby Reporter.*

At a meeting of the Philosophical Society, on Monday se'nnight, a paper was read by the President, Dr. HAVILAND, on the cases of secondary small-pox, and of small-pox after vaccination, which had occurred amongst members of the University of Cambridge during the last year; out of twenty-seven cases, five only were severe, and three of those, which were cases of secondary small-pox were much more so than the two others, which occurred after vaccination.—*Norwich Mercury.*

LORD NORBURY'S NEWEST.—His Lordship while lately indisposed, was threatened with a determination of blood in the head. Surgeon C—l accordingly opened the temporal artery; and whilst attending to the operation, his Lordship said to him, in his usual quick manner, "C—l, I believe, you were never called to the Bar?" "No, my Lord, I never was," replied the Surgeon. "Well, I am sure, Doctor, I can safely say, *you have cut a figure* IN THE TEMPLE."

THE METROPOLITAN WATER-SUPPLY: THE LONDON WATER BILL.

AT the sitting of the Joint Committee which was held on June 12th Lord BALFOUR of BURLEIGH presided.

On behalf of the Corporation of the City of London Lord ROBERT CECIL, K.C., was allowed to state the well-known contention of that body, that it would be more just if payment for the supply of water were made by meter.

Mr. PEMBER, K.C., on behalf of the water companies, proposed that a schedule should be added to Clause 13 of the Bill to define the conditions under which the debenture holders of the companies were to be paid in water stock. The Committee rejected the proposed schedule but required that definite provision should be made as to the period of redemption of the water stock issued to the debenture holders and to the shareholders respectively, the period of redemption being fixed at 60 years in the case of the former and 30 years in the case of the latter.

In regard to the matter of appeals from the arbitrators to the House of Lords—a matter which was considered at one of the earlier sittings—the Committee decided that an appeal should be allowed on a question of law should such leave be granted by the Court of Appeal, but not otherwise. The Committee further decided that "the Court of Arbitration should act in accordance with the decision arrived at in any such case." It was further provided that the Court of Appeal should have power to decide as to which party should pay the costs. On these points the decision of the Committee was unanimous, in spite of strong protests by Mr. Pember who argued that the effect would be that the Court of Appeal would thereby be allowed to stereotype its own decision as the law of the land.

One of the water company directors succeeded in obtaining the insertion into the Bill of a special provision to the effect that he should on his retirement receive a pension equivalent to two-thirds of the salary and emoluments received by him during the two years next before the passing of the Act.

On June 13th the Committee finished their consideration of the Bill. Lord BALFOUR of BURLEIGH again presided. A new clause was accepted to compel the Water Board to take over from the companies two chemists who are at present in their employ and that "for purposes of compensation" they should be deemed "existing officers" within the meaning of the Act.

A new clause was proposed by the Local Government Board to compel the Water Board to make provision for the chemical and bacteriological examinations of the water supplied and, further, to compel the Board to supply the necessary buildings, apparatus, plant, and staff to carry on such examinations efficiently.

The clause was, after a division, accepted by the Committee, some less important amendments were dealt with, and finally it was ordered that the Bill should be reported to the two Houses of Parliament.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following is a continued record of some of the principal amounts which have been received in aid of the Fund up to the time of going to press on Tuesday. The total sum then amounted to about £28,000.

	£	s.	d.
Christ Church, Lancaster-gate	1628	0	0
Holy Trinity, Tulse-hill	287	0	0
St. Mark's, Hamilton-terrace	232	0	0
St. Luke's, Radcliffe-square	220	0	0
St. Columba's Church of Scotland	171	0	0
Christ Church, Chislehurst	153	0	0
St. Bartholomew's, Sydenham	150	0	0
Highgate Parish Church	143	0	0
Brompton Parish Church	142	0	0
Immanuel and St. John's, Streatham	120	0	0
Emmanuel, Wimbledon	109	0	0
St. Saviour's, Chelsea	104	0	0
All Saints', Notting-hill	50	0	0
Aldenham Parish Church	64	0	0
St. German's, Blackheath	57	0	0
St. Mary's, Stoke Newington	70	0	0
Bromley Congregational Church, Kent	74	0	0
St. Mary Aldermary, &c.	96	0	0
St. Andrew's, Whitehall-park	65	0	0
Acton Parish Church and Mission Church	50	0	0
Clapham Parish Church	86	0	0
Miss M. E. Druce	50	0	0
Holy Trinity, Eltham	51	0	0
St. John's, Notting-hill	56	0	0
St. Saviour's, Paddington	76	0	0

ASYLUM REPORTS.

Cumberland and Westmorland Asylum (Annual Report for 1901).—The average number of patients resident during the year was 667, comprising 341 males and 326 females. The admissions during the year amounted to 175—viz., 100 males and 75 females. Of these, 132 were first admissions. Dr. W. F. Farquharson, the medical superintendent, states in his report that of the 175 patients admitted 155 were chargeable to the rates, 19 were private patients, and one was a criminal. The admissions included five cases of congenital imbecility, nine cases of epilepsy, five cases of general paralysis, four chronic cases transferred from other asylums, and 10 patients who were over 70 years of age. In 27 cases among the admissions the attack of insanity had lasted over a year

before the patient was brought to the asylum. "The great majority of the cases enumerated were incurable. More than one-half of the patients admitted came here in a feeble state of health; eight of these were extremely weak and exhausted and several died very shortly after admission." 50 of the patients admitted had suicidal tendencies and 24 of these had made actual attempts at suicide before admission. Hereditary predisposition to insanity was ascertained to have existed in 48 patients, or 27·4 per cent. of the admissions, and 31 cases, or 17·7 per cent., were attributable to alcoholic intemperance. "Where definite exciting causes of the attacks could be traced, there were in the great majority of instances diseases or disorders affecting the bodily health, mental shock being responsible for only a very small proportion of cases." The number of patients discharged as recovered during the year amounted to 96, or 14·5 per cent. of the average number resident. The deaths during the year amounted to 44, or 6·5 per cent. as calculated on the same basis. This death-rate was one of the lowest recorded in the history of the asylum. The mean age at death was 51·7 years. Of the deaths two were due to cerebral hæmorrhage, two to cancer of the uterus, four to organic dementia, four to pneumonia, four to senile decay, four to tuberculosis, six to general paralysis of the insane, nine to cardiac disease and its complications, and the rest to other causes. The cause of death was ascertained by post-mortem examination in every case. In five cases where the deaths were not attributable to tuberculosis evidence of tubercle was found post mortem. The general health of the patients throughout the year was good, epidemic or zymotic diseases having been absent. With the exception of three cases of fracture of bones, accidentally sustained, there were no serious casualties. The Commissioners in Lunacy state in their report that the patients were for the most part neatly clothed, contented, and orderly in behaviour, and that the medical case-books were kept in a manner creditable to the medical staff. The committee of management states in its report that a plan for the further purification of sewage by bacteria beds and earth filtration has been adopted, and that additional exits for escape in case of fire have been put up at the top of the main staircase and also on the first floor of Cumberland House which is a part of the asylum.

Leicester Borough Asylum (Annual Report for 1901).—The average number of patients resident during the year was 722, comprising 308 males and 414 females. The admissions during the year amounted to 408—viz., 118 males and 290 females. Of these 347 were first admissions. Dr. J. E. Montague Finch, the medical superintendent, states in his report that of the total number of patients remaining in the asylums at the end of the year—viz., 797—12 men and 17 women were deemed curable. "The health of the patients on admission in a great many cases was extremely enfeebled, many being brought to the asylum on an ambulance and requiring to be carried to bed, and no less than 10 died before they had been in the asylum a month." Of those admitted 22 were between the ages of 70 and 80 years and four were between 80 and 90 years of age. Among the chief causes of insanity in those admitted were hereditary influences in 35 instances, congenital defect in 10, alcoholic intemperance in 24, mental worry and adverse circumstances in 24, and old age in 10. The number of persons discharged as recovered during the year amounted to 72—viz., 28 males and 44 females, or 10·0 per cent. of the average number resident. The deaths during the year amounted to 54—viz., 33 males and 21 females, or 7·5 per cent. as calculated on the same basis. Of the deaths two were due to cerebral softening, three each to apoplexy and pneumonia, five each to congestion of the lungs and phthisis, eight to epilepsy, 13 to general paralysis of the insane, and the rest to other causes. Two cases of suicide occurred during the year, one from strangulation and the other from poisoning by corrosive sublimate taken before admission. A married woman was confined after admission and another married woman among the admissions was delivered of twins. The institution has been free from any disease of an epidemic nature during the year. A new extension of the building has been completed and the new wards were opened for male patients who were removed thither. The old male wards were altered and renovated in order to render them available for female patients, and they were all occupied before the middle of the year. The work of the nurses has been, adds Dr. Finch, exceptionally trying and arduous owing to the large number of admissions on the female side and the reorganisation of the wards. The Commissioners in Lunacy state in their report that the day-rooms were bright and comfortable and afforded ample accommodation, that the dormitories were well arranged and ventilated, and that the medical case-books were very well kept. The visiting committee of the asylum states in its report that in consequence of the increase in the number of female patients in the borough notice will be given to the proper authorities for the removal of a certain number of out-county patients. The expenditure on additions, alterations, and improvements cost £392 and on ordinary repairs £1200.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL R. H. QUILL joins at Dover and takes up the duties of Principal Medical Officer of the South-Eastern district. Deputy Surgeon-General Don relinquishes his appointment as Medical Examiner of Recruits at St. George's Barracks in October next. Lieutenant-Colonel R. G. Thomsett takes up duty at Portsmouth. Surgeon-Lieutenant Taylor, A.M.R., is appointed to the medical charge of the Militia encamped on Middlewick, Colchester.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions among officers of the Indian Medical Service:—Majors to be Lieutenant-Colonels (dated April 1st, 1902): *Bengal Establishment:* Richard Havelock Charles, George Duncan, and William Ainley Sykes, D.S.O. *Madras Establishment:* Edwin William Reilly and James Scott. *Bombay Establishment:* Robert William Steele Lyons, John Patrick Barry, and Alexander Vass Anderson. Captains to be Majors (dated March 31st, 1902): *Bengal Establishment:* Allan James Macnab, Henry Smith, Charles Neil Campbell Wimberley, and Ernest Wickham Hore. *Madras Establishment:* William Dunbar Sutherland, Percy Carr-White, Edmund Hassell Wright, William Molesworth, Clarence Forbes Fearnside, Charles Arthur Johnston, and Gerard Godfray Giffard. *Bombay Establishment:* James Jackson, Ashton Street, and John Bland Jameson.

The King has also approved of the retirement from the service of the undermentioned officers:—*Bengal Establishment:* Lieutenant-Colonel James Young (dated March 31st, 1902) and Lieutenant-Colonel Charles William Owen, C.I.E., C.M.G. (dated March 15th, 1902).

The above notification supersedes that of the retirement of Lieutenant-Colonel William Owen made in the *London Gazette* of March 20th, 1902.

ARMY MEDICAL RESERVE OF OFFICERS.

To be Surgeon-Majors (dated June 21st, 1902):—Surgeon-Captain W. B. Macdonald and Surgeon-Captain W. B. Mackay.

ROYAL NAVAL HOSPITAL, HASLAR.

The session of special instruction at the Royal Naval Hospital, Haslar, terminated on June 20th, when the following surgeons received appointments to His Majesty's ships. Two prizes—viz., the gold medal and microscope—were awarded to Surgeon Oswald Mills, R.N., late of St. Thomas's Hospital, and one—viz., the silver medal and £10 worth of books—to Surgeon Leslie M. Morris, R.N., late of St. Bartholomew's Hospital. Surgeons in order of seniority:—

Name.	Marks.	Name.	Marks.
Oswald Mills	5662	William N. L. Cherry ...	3953
Leslie M. Morris	5185	John G. Peebles	3790
Alexander K. Smith-Shand	4321	Thomas W. Myles	3766
Norman H. Mummery ...	4276	Elijah R. L. Thomas ...	3444
John Fullarton	4245		

THE WESTERN COUNTIES SOLDIERS' CONVALESCENT HOME, BATH.

The Duchess of Somerset has issued an urgent appeal for this excellent institution, which is situated at Combe Down, Bath. The home has now been in existence for two years and 170 patients have already been admitted. It appears that unless more funds are forthcoming the home is to be shortly closed. The authorities are anxious to keep it open until the end of the present year and for this purpose about £500 are required. The Soldiers' Aid Society has promised £200 on the condition that the remaining £300 are raised. The Duchess of Somerset has subscribed £100 and on

June 8th some of the Bath churches had collections for the home.

Sir Joseph Dalton Hooker, G.C.S.I., C.B., Surgeon R.N. (retired), late Director of the Royal Botanic Gardens, Kew, has been presented by the German Emperor with the Order Pour le Mérite for his distinguished research in science and art.

Correspondence.

"Audi alteram partem."

THE DESTRUCTOR NUISANCE AT TORQUAY.

To the Editors of THE LANCET.

SIRS,—It might have been thought that the frequent appeals for the establishment of open-air sanatoriums would have gradually brought people to see that foul air is as great a menace to health as foul water or adulterated food. Here, however, in a "health resort," where the only industry, as the Duke of Argyll once said, is "the manufacture of health"; the breezes which used to make the summer climate on the higher levels delightful now carry with them and cause to impinge upon various parts of the town the fumes from a refuse destructor, and in spite of all the representations made to the authorities, including those of the Special Commissioner of THE LANCET, no intelligent efforts have been made to deal with the cause of the nuisance which has just now entered upon its fourth summer. Noxious matters issuing from the chimney of the destructor are weighed in the mental balance of the town councillors against noxious matters issuing from the kitchen chimney of a cottage and they find that the latter weigh the heavier. When we consider that a cottage chimney would burn only a few pounds of coal, whereas the destructor burns some tons of refuse, we see that such a state inverts the arithmetical relations.

If we look at the chimneys under varying conditions we shall find the same singular inversion of facts. On Sunday, for instance, the destructor does not work, whilst for the cottage chimney it is the busiest day of the week. Sunday, according to this proposition, ought to be the day when the air is foulest. As an actual fact, it is the day which brings complete relief from the nuisance. Again, when the destructor is working but the atmospheric conditions permit of the ascent of the fumes, we complain of no pollution of the air. This is notably the case in winter, the ascent being favoured by the greater difference which prevails at that season between the temperature of the fumes and that of the outside air. In winter the cottage chimneys are active, in summer they are less so. In winter the destructor gives but little annoyance; in summer it is an abomination. Here, again, then, the facts of the case are turned upside down in the proposition. I do not know what the chairman puts into the scale against this and other facts. We have seen in Torquay some very striking effects of coal smoke, but they came from the town council's electric station, and happily they have now been completely remedied by the adoption of smokeless coal.

It has been suggested that potassium cyanide or arsenical fumes are present in the destructor products in appreciable quantities, but whether they are or not, the evils caused by the gases, paraffins, and slags blown upon us produce effects which are unsatisfactory by-products for a place whose object is "to manufacture health." Many of the inhabitants, like myself, came down here to live as much as possible in the open air. But in the summer time it is often impossible for us to remain in the garden—rather we are compelled to take refuge in the house and shut the windows. In former times the summers here were particularly cool and enjoyable. Now we are glad to spend as much of the summer as we can away from Torquay, even in places where the natural advantages are incomparably less favourable. But all might be put right, as your Commissioner has clearly shown, and I feel that ultimately all must be put right. Should, however, the nuisance remain unmitigated through the present summer those interested in the great questions of the pollution of town air should not miss the opportunity of paying a visit to Torquay, when they will find an instructive object-lesson as to the results of placing the top of a chimney of a refuse destructor in the wrong place.—I am, Sirs, yours faithfully,

HENRY HUMPHREYS, M.A., M.D. Cantab., M.R.C.P. Lond.

Torquay, June 14th, 1902.

*** Owing to the great length of Dr. Humphreys's letter we have been compelled to reduce it. The chemical considerations into which he enters in regard to kitchen chimney and destructor smoke are omitted. Obviously the two kinds of emanation show sharp differences in physical character and chemical composition which Dr. Humphreys points out.—ED. L.

THE MEDICAL SERVICE OF THE MERCHANT MARINE.

To the Editors of THE LANCET.

SIRS,—I address to you this communication for the purpose of calling to the attention of my colleagues the present condition and prospects of seafaring physicians—ships' doctors of the merchant marine. In these days of keen competition and plethoric supply of medical men, who must consequently see their field of opportunity and financial prospects lessened, it seems only rational and business-like that we should stand together and demand proper recognition and remuneration commensurate with the outlay of time and money which is necessary to fit us for professional duties. Physicians in private practice are repaid according to their skill and industry, and often by good fortune. Army and navy medical men receive fair recompense for their services, good social position, and prospects of advancement. Too many physicians, however, all qualified, are giving their valuable time to hospitals, sanatoriums, and asylums for the niggardly salary of £50 to £150 per annum, which institutions carry heavy financial burdens but do not enable their medical officers to support a family. The physicians, it must be admitted, have in some cases chance of advancement, which cannot be said of that most abject class of practitioners—steamship doctors.

Nearly every international passenger-carrying steamer of certain capacity is compelled to carry an officer, who is bluffed by the company into accepting for his services the pittance of £8 to £12 per month on English and American ships, £5 to £10 on German boats, and about the same amount when sailing under other flags, and as they are seldom allowed to charge a fee for their services their pay barely covers the cost of uniforms and other items of expense. On American ships their position is humiliating as the engineers, deck officers, as well as freight clerks receive better wages and are judged accordingly. Unfortunately most steam-ship companies, only wishing to comply with law, are satisfied with any so-called doctor and there are always numbers of professional "scabs" who rent themselves out for a flunkey's salary. It seems to me a disgrace that any qualified man should consider his services worth less than a guinea a day and I believe that if individuals and medical organisations would maintain their self-respect and assert their rights by demanding that no position in a steam-ship company, corporation, or institution of any kind be filled under £30 per month (which would support a family decently), they would soon gain their point and at the same time command the respect that educated physicians deserve. They would be received at their own estimate and not ranked with "unskilled labour." It is well known that many young men go to sea merely for travel, but they should not give their time away any more than in civil practice, for the physician's time, as well as actual services rendered, must be considered.

The Spanish-American doctors, although wanting in some respects, uphold their rights and refuse to accept less than £15 a month and a free hand in practice, and *get it*, because they hold together and are difficult to get at the price mentioned, as they realise that their salary should be £30 instead of one-half of that amount. I trust that this subject will receive from the profession the attention that it deserves. I am, Sirs, yours faithfully,

W. T. BURRES, M.D.

R.M.S. *Peru*, Panama, Colombia, May 1st, 1902.

TUMOURS OF THE STOMACH.

To the Editors of THE LANCET.

SIRS,—I have read the brief account in THE LANCET of June 21st, p. 1763, of the case under the care of

Mr. Mayo Collier, which is described as a "large malignant growth of the pylorus" treated by gastro-jejunostomy. May I venture to predict—and I think there is little hazard in the venture—that the case will prove to be, not one of malignant disease, but of chronic ulcer, of the stomach? As is well known, it is quite impossible to determine the character of any tumour in the stomach by inspection and palpation alone. The extraordinary accuracy with which the tumour resulting from chronic ulceration with induration may mimic the appearances in malignant disease has deceived such experts as Czerny and Kocher. Both these surgeons have removed portions of the stomach for supposed cancer and found on examination of the specimen nothing more than chronic ulceration and thickening. The history of Mr. Mayo Collier's case certainly gives support to my prediction. It is now three and three-quarter years since the onset of symptoms and the patient is in good and improving health. Five years before the operation the patient suffered from "peritonitis and inflammation of the bowels." May this not have been due to the perforation of a gastric ulcer causing peritonitis? At the operation "the pylorus with growth was firmly adherent to the liver and gall-bladder and the whole of the structures were matted together by old adhesions," precisely the condition that one would expect to find if perforation had occurred. Mr. Mayo Collier does not make mention of the chemical examination of the stomach contents, as to the presence or absence of free hydrochloric acid, or of lactic acid.

I have had under my care three cases considered to be malignant at the time of the operation but proved by the subsequent history to be instances of chronic ulcer with massive induration. The third case was sent to me in June, 1901, by Dr. Crawford Watson of Harrogate. A tumour of the size of a fist was felt in the abdomen; at the time of the operation a dense hard mass four inches in diameter occupied the isthmus of an hour-glass stomach. The tumour was firmly welded to the pancreas, was adherent to the liver and abdominal wall, and was therefore irremoveable. The cardiac loculus could not be reached because of the adhesions and I was therefore prevented from performing a gastro-enterostomy. I was compelled to be content with a retrograde dilatation of the stricture between the two sacs. With difficulty I passed my little finger through the centre of the supposed growth, then my index finger, and finally three fingers. The patient rapidly recovered from the operation and vomiting which had been the chief, and a most distressing, symptom entirely ceased. Before the operation the patient looked haggard, worn, and ill; she is now ruddy and plump; before the operation she weighed 4 stones 13½ pounds; she weighed when last seen 7 stones 7 pounds; before the operation she vomited after all food; now she can take any food in any quantity. I think that no one seeing the tumour when the abdomen was opened could have doubted its malignancy. Yet there is no trace of any tumour now. I do not touch upon the question, which seems to be settled in the affirmative, as to whether veritable malignant growths in the abdomen or elsewhere are capable of spontaneous and complete disappearance. I am, Sirs, yours faithfully,

Leeds, June 21st, 1902. B. G. A. MOYNIHAN.

THE FEES OF MEDICAL WITNESSES.

To the Editors of THE LANCET.

SIRS,—Perhaps you will kindly allow me, as a near relation of Judge Greenhow, to make a few remarks on your leading article on "The Fees of Medical Witnesses" in THE LANCET of June 14th, p. 1702. In the first place you seem to me to err in thinking that the judge meant that the witness should give his evidence "gratis" or that there was any question of "gratuitous" services in the court; it was simply a matter of prepayment of the fee, as is plain from the expressions that he used: "It presses hardly upon poor people who have not several guineas to put down"; "You still persist in your intention of having the money laid down before you give evidence in this poor person's case?" "It seems to me an extraordinary line for gentlemen of the medical profession to take up, that they should require the money down." If, in the next sentence, as it is reported, the expression "decline to give evidence without fees" is made use of, it is plainly intended to be qualified by the same words with regard to fees as were used above—viz., "put down," "laid down," "money down." There may, no doubt, be solicitors who are given to "speculative" litigation or who refuse to pay their fees to medical and other witnesses, but that is no valid reason why the poor should be denied fair facilities for recovering, in the vast majority of cases quite legitimately, compensation for injuries; and, as the resident medical officers of our hospitals and dispensaries must from the circumstances of the case be almost always the principal witnesses, it would be practically a denial of justice if their evidence were permitted to be for any reason excluded.

Supposing the case of an accident to a workman occurring in the road through the mismanagement of a motor-car, the only witness of which is some gentleman other than a medical man. An action is brought by the injured man and the witness, who may be an engineer engaged in large practice, declines to take the oath or to give evidence till his fee is paid. That which he would say, if he chose, would certainly get a verdict for the workman, as the engineer happens to have practical experience in motoring and has formed a definite opinion on this particular case: what would be thought of his conduct if he refused to speak till his fee was given to him?

I entirely agree with you that when patients are too poor to pay the medical profession gives its aid ungrudgingly, and, I would add, with absolute unselfishness. I can therefore hardly believe that the medical witness depends, as a rule, for his fee on the success of the party on whose behalf he gives evidence. It may be so now and then, but probably only in very exceptional cases; whereas it is undoubtedly a constant thing that the resident medical officers of charitable institutions in our large towns are summoned in a perfectly honest way by poor litigants to speak in the courts as to the facts connected with their injuries, and to throw obstacles in the way of such evidence being given appears highly undesirable.—I am, Sirs, yours faithfully,

H. M. GREENHOW.

Scotswood, Esher, Surrey, June 18th, 1902.

*** We maintain our views. Our leading article took into consideration all the circumstances which bring medical men into the witness-box in civil actions. These are entirely different to the imaginary case of the engineer witnessing a street accident which Mr. Greenhow suggests as a parallel. Few are called upon to give evidence in such a case more than once or twice in a lifetime and their evidence is that of the ordinary citizen who by chance sees an occurrence out of which a cause of action arises and is in a position to form an opinion as to the existence of the cause of action. The medical man, on the other hand, by the nature of his profession, is constantly brought in contact with injured persons, and his evidence has nothing or little to do with the cause of action if the injured person chooses to make his injuries the subject of litigation. There is absolutely no reason why the medical man should insist on prepayment for his services as a witness if he prefers not to do so, but there can be no just reason for blaming him if he does so insist. He has as much right to decline to give evidence without prepayment, in our opinion at all events, as a solicitor has to decline to accept the instructions of a client under the same conditions. The case of a medical witness may be better compared to that of an engineer, if we imagine the engineer to have had a complicated piece of machinery brought to him in order that he may advise upon its reconstruction after an accident or who has had an invention submitted to him by a stranger for advice as to its manufacture. If the engineer is subsequently asked to give evidence in an action to recover damages on the ground that someone had negligently injured the machine or in a lawsuit to determine the ownership of the inventor's patent, let him do so by all means if, and on what terms, he chooses. Let him, however, be at liberty to say: "My time is valuable, I prefer that it should be paid for, and I prefer the certainty of prepayment to the uncertainty of waiting, particularly in a case the merits of which I know nothing about." Mr. Greenhow has not, perhaps, had the same opportunities as ourselves of learning how hardly the present inadequate scale of remuneration presses upon medical witnesses and how often the medical witness is not paid for his services.—ED. L.

THE PINEAPPLE AS A DIGESTIVE AID.

To the Editors of THE LANCET.

SIRS,—The value of the pineapple as a proteid digestive I can fully confirm, not only from personal experience at the table but also from experiments in vitro. Its active principle, bromoline, has long been used in the preparation of Masquera's beef jelly, a most satisfactory extract; but, unlike most ferments, owing to its instability the commercial preparation of bromoline has, I believe, so far proved unsuccessful. The reputation of the pineapple has suffered for many reasons; far too much is eaten at a time and the fibrous part is swallowed as well as the juice. To obtain its full digestive value one quadrant of a moderately (say half an inch) thick slice is ample for one meal; it should be well masticated and the fibrous part rejected. As justly remarked it must not be cooked and it should be just ripe. My experience is that the preserved form has practically no digestive power.

Apart from its being an aid to digestion it has a powerfully solvent action upon plastic exudation—e.g., diphtheria membrane. This is easily demonstrated by exposing a portion of the membrane or some white blood-clot to the action of the juice in a flask, when under favourable conditions of temperature and movement it will soon be dissolved. When, however, applied to the throat, either as a "swab" or spray, in a case of diphtheria, the contact is so short that one cannot expect extensive solution, but it will be found to exert a decidedly softening effect on the sticky and stringy exudation so as to admit of its easy detachment. Again, too, its solvent power is well shown upon thick and horny epidermis in a manner similar to salicylic acid, although somewhat slower in action. If a thin slice of fresh pineapple be kept in close contact with a corn for eight hours it is so softened as to admit of ready removal. Likewise it softens the horny papillæ in keratosis of the tonsil and rapidly relieves the "pricking sensation." Pineapple juice has evidently wide therapeutic possibilities but for whatever purpose employed it must be borne in mind that the fresh juice alone can be relied upon.

I am, Sirs, yours faithfully,

WYATT WINGRAVE, M.D. Durh.

Devonshire-street, W., June 7th, 1902.

CANNABIS INDICA IN CHOREA AND PERTUSSIS.

To the Editors of THE LANCET.

SIRS,—Early this year I was called to see a—to me—record case of chorea. The patient, a bright girl, aged 11 years, was suffering from her third attack in five years. I tried increasing doses of Fowler's solution with apparent success, but in a fortnight she was frightened by a steam fire-engine dashing past the house at night and the next morning I found her flinging her arms and legs about with such violence that they were severely bruised against the back and legs of the couch on which she lay. Fearing death from exhaustion I put her on opium, of which it required from three to four grains a day to control the muscles. Then the appetite failed and she had in addition a severe attack of toothache, necessitating the removal of an upper molar under gas, which was only administered with great difficulty. This operation again intensified the movements and I resorted to Indian hemp, giving her seven and a half minims of the tincture made from Parke, Davis and Co.'s fluid extract every four hours. The effect was magical. Next morning she was lying composed on the couch, looking perfectly happy, with only slight muscular twitching and appetite improving. In three weeks she could dress and feed herself without much assistance and has now been for over two months strong and well. While attending this case I was called to one of pertussis in a boy, aged 22 months. The cough was almost incessant and accompanied with vomiting. I gave him two minims of the tincture of cannabis indica every three hours. The next day I was told he had a very good night, coughing only three times. On the third day the cough had almost ceased and by the end of a week had disappeared. In a second case shortly after, that of a girl, aged five years, I gave five-minim doses every four hours. After the second four-ounce mixture had been finished the mother told me the girl only coughed slightly about once a day. She took no more medicine and is quite well. In all three cases the following points were noticeable: (1) direct relief to spasm; (2) absence of any head symptoms; and (3) non-interference with appetite or digestion. I may add that only a little chloroform water was added to the tincture to conceal the slightly unpleasant taste and that the mixture was well taken in each case.

I am, Sirs, yours faithfully,

Birmingham, June 20th, 1902. E. T. BURTON.

INSANITY AND THE DEATH PENALTY.

To the Editors of THE LANCET.

SIRS,—I think that the above subject is one of great importance and I agree with most of the remarks in the leading article in your issue of June 21st, p. 1782. I wish, however, that you had more strongly condemned the practice adopted at some of these trials—i.e., to consider a criminal insane because the court shrinks from the capital sentence. By all means, if the public conscience is averse to capital punishment, let it be abolished, but it is not right that some murderers should suffer the penalty of the law and others get off on the score of insanity who, in the eyes of all except certain "experts," are fully as sane as the former. At the present time it might be fairly argued that all murderers are insane at the time they commit their crimes. In the majority of criminals of the more brutal type, by examining their past history it is not unlikely that a condition of "minor epilepsy" might be diagnosed. This may be all very well from a psychological point of view, but it is questionable whether it tends to the public safety. I cannot help thinking that the law, as laid down in the McNaughton case, and which is still the law, was far sounder for protecting the public than that inspired by "the tendency towards mercy natural to advancing civilisation." A man makes improper proposals to a barmaid, accompanied by a pecuniary bribe, and on her refusal shoots her. He is exonerated on the ground of "minor epilepsy." A few years ago a girl, aged 19 years, was convicted of murder at the Hertford Assizes and executed. Her crime was the sending poison to an imbecile sister at a public asylum, which the latter unfortunately partook of, and was apparently prompted by an idea that she would obtain by her sister's death a small sum of money in the Savings Bank. Surely, as good a case of insanity might have been made out there. It is more than likely that during the last two years criminals have been executed in this country quite as insane as Simmons.

The object of all punishment is to deter. If it has not this effect it is useless. In the case of an undoubted lunatic it can have no deterrent effect and no good is gained by its infliction. But can it be affirmed with any certainty that punishment would have no deterrent effect on criminals, whose insanity depends on the niceties of expert evidence? Might not the punishment of criminals like Simmons tend to make others of his class keep their illicit passions more under control? I cannot help thinking that the safety of the public lies more in that direction than in striving on humanitarian principles to prove every murderer insane in order to escape the penalty of the law.

I am, Sirs, yours faithfully,

M. GREENWOOD, M.D. Brux., LL.B. Lond.,

Hackney-road, N.E., June 21st, 1902. Barrister-at-Law.

THE LONG FOX MEMORIAL.

To the Editors of THE LANCET.

SIRS,—At a meeting held in the Chapter House of Bristol Cathedral on May 29th the following resolution was unanimously adopted:—

That a memorial be established to the late Dr. Edward Long Fox and that it include: (1) the placing of a tablet in the cathedral; (2) the founding of an annual lecture at University College, Bristol, in some subject connected with medical science, to be called "The Long Fox Lecture"; (3) the partial supporting of a medical missionary student at University College, Bristol, to which the balance of the fund collected will be devoted after providing for (1) and (2).

We shall be glad to receive any contributions from friends of the late Dr. Fox.

We are, Sirs, yours faithfully,

W. W. ASQUITH, 34, College-road, Clifton;
E. MARKHAM SKERRITT, Edgecumbe House, Richmond-hill, Clifton,
} Honorary secretaries.

June 21st, 1902.

SANITATION ON THE RIVIERA: WHAT WILL BE DONE DURING THE SUMMER?

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THIS is the moment for carrying out public works and effecting general improvements at the various winter stations of the Riviera. The visitors have gone, the greater number of the hotels are closed, and the permanent inhabitants are willing to endure some personal inconvenience if it will help to increase the golden harvest which they hope to reap when the winter season comes round once more. What with the South African war and the prevalence of small-pox the number of visitors was far below the general average last winter. Now, however, the war is over and it remains for the local authorities to push forward their various schemes for sanitary reform so that small-pox and typhoid fever may not once again frighten away intending visitors. If this is achieved there is good reason to hope that the next season will be a great improvement on that of last winter. But there is much to be done and it is not possible for more than a partial improvement to be realised between this and the end of the autumn. For instance, the water-supply of Nice and of some neighbouring towns is insufficient and unsatisfactory. The authorities at Nice cannot press the householders to abolish their cesspools and to drain directly into the sewers because there is not enough water to ensure the satisfactory flushing of the closets. The main supply is from the Vésubie mountain and it is distributed at Nice, Monaco, and elsewhere. Whether this water is absolutely safe for drinking purposes is an open question. Favourable analyses of the Vésubie supply have been published and yet an increase in the number of cases of typhoid fever was noticed following upon a heavy rainfall, and this has occurred more than once. But a heavy rainfall by choking up the sewers occasions an extra escape of air from badly-ventilated sewers into dwellings which have imperfect systems of interception. Without attempting to discuss this question in its complex bearings it is safe to say that the various municipalities concerned should unite to carry out some vast scheme for the improvement and increase of their water-supply. The offshoots of the Alps stretch far behind these towns. There are mountain torrents and splendid gathering grounds for the collection of pure water but the cost might be too great for any one town to bear. An association of towns dividing the initial expenses would render the most ambitious schemes practicable.

At Nice the sewers used to drain into the sea at the nearest convenient point. Consequently the sea front was more or less contaminated by these sewer outfalls. Now the outfalls of the old town, to the east of the river Paillon, which divides the town into two parts, are received in a large main collector. A syphon has been constructed under the bed of the Paillon, and the sewage from the east is thus carried over to the western side of the town, and here it falls into the sea by the one general outfall close to the pier. But this again is a serious inconvenience, as the pier faces the best part of the celebrated Promenade aux Anglais. Fortunately, this grievance may now be considered as a thing of the past. A main sewer has been built all along the sea front with a fall far away to the west and in the month of July the present outfall will be closed. Henceforth the sewage will be thrown into the sea about a mile and a half to the west and beyond the limits of the town. Another improvement awaits the visitors for next season. During the summer months 150 new street gullies will be put in position. These gullies are made of hardware, but contain metallic sand collectors that can be easily lifted out, and the sand, leaves, and other impedimenta can be promptly and frequently removed. Many times it has been thought that bad odours came from the sewers, whereas the nuisance was caused by the accumulations within old-fashioned and badly-constructed street gullies. If, together with these measures, vaccination is more widely enforced and suitable accommodation is provided for the isolation of patients suffering from infectious diseases there will be less hesitation on the part of visitors to spend the next winter at Nice.

In the Principality of Monaco the principle of draining directly into sewers, which involved the abolition of cesspools, was adopted and proclaimed by a decree which bears the date of June 23rd, 1894. But a long time must of necessity elapse between the acceptance of a principle and its practical application. In many parts of the principality sewers had to be built, and there was this difficulty, that the sewers of the low-lying district of the Condamine had of necessity their outfall in the Bay or Port of Hercules. This outfall was close to the bathing establishment and was very objectionable. To meet the difficulty two Shone ejectors of 500 gallons capacity have been employed. These raise the sewage to a higher level, whence it can flow along a main sewer that passes behind the Rock of Monaco and then falls into the sea to the westward of the old town, where it can cause no inconvenience. Without entering into the technicalities of the drainage scheme of the principality there are still at least two important defects that should, and that could, be immediately remedied. The one is that there yet remain some houses that are not connected with the sewers and that preserve the old and barbaric system of cesspools. Secondly, the sewers themselves are inadequately ventilated. Four large chimneys, or shafts, have been placed at the highest levels, but these are altogether insufficient. Below these ventilators and at lower levels there are numerous automatic flushing tanks. This is all very well so far as the cleansing of the sewers is concerned, but the water as it rushes out presses the air forwards, while the ventilators are behind. How, then, is the air to escape if not by breaking the water seals of the traps? It stands to reason that ventilators should be in front of the flush tanks as well as behind them. A strong, sudden flush will draw the air down from the ventilator that is behind and push it out through another ventilator that should be in front.

Then, it is well known that ventilators only act upon the portion of the sewer that is in their immediate neighbourhood, whereas at Monaco some parts of the sewers are about half a mile away from one of the four ventilators. M. Tschirret, who is in charge of much of the public work which in an English town would be entrusted to the borough surveyor, proposes to introduce a pipe behind the dip-trap of the street gullies. These pipes, opening over the roofs of the nearest houses, would become subsidiary sewer ventilators. But some householders might object. In that case the dip which forms the water seal of the nearest gully might be removed and the sewer would then ventilate into the street on a level with the roadway. If the sewers are self-cleansing and ventilated throughout there should be no nuisance. If there is a nuisance then it is clear that the sewer is not in a satisfactory condition and must be seen to. The object of sanitation is not to convey a bad odour to some point or altitude where it will not be noticed, but to remove all that may cause such a bad odour. Actually the principality is remarkably free from any such unpleasantness, and notwithstanding the defects just mentioned it is one of the best drained places on the entire Riviera. Having done so much it is only natural to expect that the authorities will not neglect these minor imperfections but will soon have them remedied.

There is no lack of enterprise at Monaco, nor does the fear of expense hold the authorities in check. Thus in dealing with the disposal of household refuse the Government of the principality did not hesitate to incur the necessary outlay to build a destructor. The Horsfall system was adopted. This system precludes the admission of cold air directly upon the furnace. Such air is warmed first by passing through heated channels outside the furnace. The first products of combustion also are brought back underneath the fire, and the soot, dust, &c., are thus destroyed. By such means the nuisance that might result is reduced to a minimum. As a further precaution the destructor is placed in an isolated position and only worked at night. It has four cells and can consume 54 cubic metres of refuse in 24 hours, but the refuse is not of a nature that it will burn unaided. It is necessary to add coke powder. Fortunately this can be obtained from the gasworks and the gas administration is credited with five francs for every ton of coke powder which it provides for the destructor. This, however, is a misleading calculation, for the commercial value of the coke powder is about 10 francs the ton, so that the destruction of the refuse really costs more than it appears to do. Though the clinkers and the ash from the destructor are utilised or sold and bring in a

small income, still it is felt that the present method of dealing with the refuse is too expensive and researches are being made to find some more economical mode of proceeding. In the meanwhile, and so far as the public is concerned, the main fact remains that domestic refuse is collected every day and promptly destroyed by fire. This is the safest solution of the problem and the inhabitants of the principality now know nothing of the dustbin grievance which has been the source of so much trouble in many parts of Great Britain.

It would be difficult to quit the subject of Monaco without saying a word about the Casino. Great as has been the progress accomplished in regard to sanitary matters throughout the principality the old-standing grievance of the inefficient ventilation of the Casino still survives. This want of ventilation is more particularly felt in the gambling rooms. Much money has been spent to enlarge and to beautify the Casino. It would have cost much less to provide efficient ventilation. The only improvement achieved of late years in this respect has been the substitution of electric for gas light, and this, of course, is quite insufficient. Medical practitioners are still obliged to warn their patients against Monte Carlo, not so much for fear of the gambling—facilities for gambling exist everywhere—but because of the overheated atmosphere of the gambling rooms at the Casino. It is difficult to understand why this matter has been neglected so long while so much enterprise has been shown in other respects. Still, and in spite of these criticisms, Monaco and Monte Carlo remain the most popular resorts of the Riviera. Natural beauty, climate, art, and sanitary science all combine to render the principality of Monaco the most attractive spot along the whole of the Riviera. The sanitation is not yet perfect but it is better than that which exists in other Riviera resorts.

How different, for instance, is the situation of Cannes. Here a system of drainage was planned and its execution commenced many years ago, but it has never been completed. The sea front is still contamined by the outfalls from numerous sewers. Houses continue to drain into cesspools. There has been much talk but nothing effective has been done. An excellent water-supply runs daily risk of being contaminated because it is brought to the town in an open channel that passes through populated and highly cultivated districts. Typhoid fever made its presence felt once more during the last season. Still nothing is done. In one respect, however, which especially concerns the visitors, Cannes is fortunately situated: there is a British cottage hospital with English trained nurses and 14 beds for the treatment of medical and surgical cases. Then, in the extensive grounds surrounding this villa or cottage there is a pavilion with seven beds for the isolation and treatment of infectious cases. Here no distinctions are made with regard to creed. Then there is also a French Protestant charity called the Asile Évangélique, where, however, only Protestants are admitted. This institution has now an annexe for the bath treatment of typhoid fever. At the cottage hospital called Sunny Bank the patients are charged from 5*s.* to 10*s.* a day, but there are four endowed beds the occupants of which are treated gratuitously. Therefore British or American visitors are not dependent on the common hospital if suffering from some disease that cannot be treated in the lodging, the villa, or the hotel where they may be residing. In this respect the foreign colony at Cannes has set a good example which, as has been seen, the British and American winter residents at Nice are striving to follow.[1]

At Hyères considerable hopes of improvement are entertained because the Government has decided to convert this, the first and oldest winter resort of the French Riviera, into a garrison town. Barracks are now in course of construction and it is thought that they will increase the municipal revenues. According to the present disposition of the municipality one of the first things that will be done will be the construction of an isolation hospital for infectious cases. But, even as matters now stand, Mr. Biden assures me that he never encounters any difficulty with his English patients. If a case of scarlet fever, or any other infectious fever, occurs, he at once interviews the hotel proprietor and insists on an immediate and definite decision as to what is to be done. He points out that the patient must either be at once removed or allowed to remain for the whole duration of the illness. If the patient is to remain then he indicates what measures of isolation must be strictly enforced. If not, the patient is removed to one of the private rooms available at the general hospital. An English trained nurse is called in to attend to the patient and Mr. Biden continues his visits at the hospital instead of at the hotel. Of course, the patient pays for his maintenance at the hospital and obtains the diet and medicaments which his private medical adviser thinks fit to prescribe. Thus, at Hyères, the friendly coöperation between the municipal authorities who administer and own the public hospital and the British medical practitioners is an accomplished fact and seems to work satisfactorily. As yet no progress has been made with regard to a general scheme of drainage for the town of Hyères and it is to be feared that some time must elapse before the means are found to carry out public works of this description. The main difficulty rests in the divided interests of the inhabitants. There are two parties at Hyères. One represents the interests of the hotels, the lodging-house keepers, and the tradesmen; the other party represents the market gardeners who supply the northern markets with early fruits and vegetables. The members of the latter party do not care in the least about sanitary improvements and other public works calculated to increase the number of visitors. In these circumstances it will be very difficult to get a vote in favour of an expensive drainage scheme. But now that the presence of a large number of soldiers will cause the Government to take an interest in the sanitary condition of Hyères it is thought that the municipality will be compelled to devote more attention to such matters. In any case, this is the season when all these questions must be pressed forward. When the hotels are empty, when the wealthy visitors are away, and all these winter resorts seem to be asleep in the blaze of the summer sun, the time has come to dig up the streets, to lay new sewers, to empty and to close up the old cesspools, and to carry out all such public works.

[1] See THE LANCET, May 17th, 1902, p. 1428.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Maghull Epileptic Institution: Opening of the "Harrison" Home.

A NEW home in connexion with the Maghull Epileptic Institution, called the "Harrison" home, for the benefit of first-class patients, was formally opened on June 14th. The cost of erecting and furnishing the spacious building was defrayed by Mr. Frederic James Harrison, the president of the institution. The new building stands in the park of the old Manor House estate at Maghull and is beautifully surrounded, as, indeed, the whole institution is. In 1889 the Manor House was opened as a home for people suffering from epilepsy and in the first year 22 patients were treated. Subscriptions then amounted to £57 and the committee received in donations the sum of £2332. From that time onwards the usefulness of the institution has been recognised. In 1895 the "Henry Cox" home was added and the number of inmates had increased to 117. Two years later a building known as the "Iron Hall" was opened, this erection being used for indoor recreation and other purposes. Last year "Chapel House" was added, the patients then numbering 136 (70 males and 66 females). The institution is now divided into three classes—first, second, and third. The patients are afforded all kinds of amusements and congenial occupation, chiefly outdoor. The new home is well provided with comforts. On the ground floor there is a spacious dining room, also a drawing room and a billiard room, all facing the park. Dr. William Alexander, on receiving the new home on behalf of the committee, said the gift of Mr. Harrison was a princely one. He thought that institutions like theirs were invaluable. Epileptic patients never had a chance with private treatment. Even if attendants were provided for them their lives were not happy ones; either the attendant obtained the upper hand or else the patient did so, and that was not as it should be so. In the new home patients would be amongst their own class; and when they were removed from their own homes and surroundings he had always noticed a remarkable change for the better in their condition. The treatment carried out at Maghull was quite different from that adopted in private practice. The new home was intended for the better classes, and there they would be sure of obtaining proper treatment.

Dr. J. M. Rhodes (Manchester) in seconding a vote of thanks to the medical officers of the institution, said that the institution was of immense value not only to Liverpool, but to the world at large. Last year he paid a professional visit to the United States of America in connexion with epilepsy and had discovered that the Maghull Epileptic Institution was well known there through the name of Dr Alexander. He thought that the public of this country did not sufficiently acquaint itself with, and interest itself in, the terrible ailment of epilepsy. The Registrar-General's report last year gave the number of deaths from epilepsy as 2597. He thought that the State ought to take up the question of epilepsy by providing suitable homes for those so afflicted and not leave it so much to private charity and philanthropy. In America special homes were provided for epileptic patients, instead of their being allowed to live in the workhouses, and in this country something similar might be attempted.

June 20th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

By-laws Prohibiting Spitting.

THE county councils of Glamorganshire and Brecknockshire have each taken advantage of the provisions of the Local Government Act, 1888, which enable county councils to make by-laws for the "good rule and government of the county" and have drafted a by-law prohibiting spitting in public carriages, churches, &c.[1] Before the by-law can be enforced it must receive the sanction of a Secretary of State, and the Home Secretary has written to the Glamorganshire County Council to the effect that the by-law cannot be made to apply to churches, chapels, schools, and shops, but he will allow it to come into force if its operation is confined to public carriages, public waiting-rooms, public halls, and places of public entertainment. The by-law prohibits spitting on the "walls or sides," as well as on the "floor," of these places.

The Alfred Hughes Anatomical Museum.

When the late Professor Alfred Hughes left Cardiff in 1897 to join the staff of King's College he gave £350 to the Cardiff University College for the purpose of providing an anatomical museum and when it was decided, shortly after his death in 1900, to establish some memorial of his work in Cardiff the most proper course appeared to be to endow permanently the museum which he had created and to which he had contributed most valuable diagrams and specimens. This course was adopted and the endowment fund now amounts to £1666. The trustees of the fund will each year present a medal to the most successful student of the college in the department of anatomy. The medal has been designed by the Welsh sculptor, Mr. W. Gascombe John, A.R.A., and was presented on June 20th to Mr. R. K. Shepherd, B.Sc. The museum was formally opened on this date by the President of the Cardiff College, Mr. Alfred Thomas, M.P., who also presented to Mrs. Alfred Hughes the first copy of the medal.

South Wales and Monmouthshire Branch of the British Medical Association.

The thirty-second annual meeting of this branch was held at University College, Cardiff, on June 20th, under the presidency of Dr. A. P. Fiddian of Cardiff, when Dr. R. G. Price of Carmarthen was elected President for the ensuing year. There are now 265 members attached to the branch and the balance-sheet discloses a balance in the treasurer's hands of over £100, notwithstanding the fact that £38 15*s.* were sent last year to the British Medical Benevolent Fund—a charity which has always received substantial support from this branch. For the past two years one meeting of the six held yearly has been devoted to medico-ethical matters.

The late William Howell Lloyd, M.R.C.S. Eng., L.S.A., Deputy-Coroner for the Eastern Division of Carmarthenshire.

Mr. William Howell Lloyd of Llandilo, Carmarthen-hire, died suddenly from heart disease on June 13th, at Swansea, whilst on a visit there. The deceased received his medical education at Guy's Hospital and qualified M.R.C.S. Eng. and L.S.A. in 1869. He shortly afterwards settled at Llandilo where he soon acquired an extensive practice. Mr. Lloyd was medical officer of health of the Llandilo rural and urban districts and surgeon to the Great Western Railway Company. He was also deputy-coroner for the eastern division of Carmarthenshire and surgeon-captain to the 1st Volunteer Battalion Welsh Regiment. Mr. Lloyd was extremely popular in the district and much sympathy is felt for Mrs. Lloyd and the six children. At the funeral, which took place on June 18th, a very large number of mourners were present.

June 23rd.

[1] THE LANCET, March 22nd (p. 851) and May 10th (p. 1361), 1902.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The British Medical Association and the Australian Natives Association in New South Wales.

THE differences between the New South Wales Branch of the British Medical Association and the Australian Natives Association (to which reference has previously been made) are increasing. It is now a case of *guerre à l'outrance*. On April 3rd a largely attended public meeting was held to protest against the action of the branch. The chair was taken by the President of the Australian Natives Association who in the course of his address stated that the action of the British Medical Association was taken with the object of "smashing all the friendly societies in the State," but, he said, "the friendly societies were going to stand shoulder to shoulder and had the public sympathy with them. ..... They had not to fight the whole medical profession but only a small section of it." The general secretary of the Australian Natives Association then made a statement of the case. The Australian Natives Association was registered as a friendly society on Dec. 3rd, 1900, and in August, 1901, the secretary of the New South Wales Branch of the British Medical Association inquired if the Australian Natives Association would impose a wage limit of £200 per annum on its members so far as medical benefits were concerned. He was told that the association would not do so. A conference was then held between representatives of the two associations and finally a communication was received that the British Medical Association branch considered the Australian Natives Association "a society prejudicial to the interests of the profession." Following on this the medical men who had anything to do with the Australian Natives Association were ostracised. As a result of further negotiations the Australian Natives Association intimated that a reasonable wage limit would be conceded, with a graduated scale of payments by the patient over and above the sum allowed annually by the association. The British Medical Association declined the proposal and the Australian Natives Association withdrew the offer and did not intend to renew it. If the British Medical Association persisted in its present tactics the Friendly Societies Association would use the means at its disposal for the establishment of medical institutes throughout the State. The following motions were carried:—

That this meeting is of opinion that the action of the New South Wales branch of the British Medical Association in boycotting the A.N.A. is unjustifiable, unreasonable, inconsistent, and unfair, and therefore unworthy of public support, and that the action taken by that body is with the avowed intention of striking a death-blow at the existence of all friendly and benefit societies.

That in the opinion of this meeting it is inimical to the best interests of friendly societies to recognise the action of doctors belonging to the B.M.A. in fixing a wage limit, which, if countenanced, will be to the disadvantage of friendly societies generally.

In proposing the last motion the President of the Friendly Societies Association stated that the friendly society membership in New South Wales was 80,000 and that over £70,000 were paid annually to the medical officers. The societies could not afford to lose those members who were in receipt of annual incomes over £200. They were the men of intellect and knowledge in the societies and continued their membership not for personal benefit to themselves but for the assistance they could give. He proposed as a remedy for the present difficulty the formation of a medical board of their own with a capital of £100,000. The secretary of the New South Wales Branch of the British Medical Association has written to the press denying that the Association wishes to "smash up the friendly societies" and pointing out that the Australian Natives Association is on a totally different

footing from the other societies; it aims at including all persons of Australian birth, irrespectively of financial position, and all such could claim medical benefits at the same rates as other friendly societies and that according to the tables of the Government statist the proportion of Australian born to the whole population is as four to one. It would be suicidal for the medical profession to contract to attend all such at the rates current with friendly societies which were originally instituted by wage-earners for wage-earners who are unable to pay ordinary medical fees. On April 23rd the Australian Natives Association held its annual conference in Sydney and the opportunity was utilised to discuss the action of the medical profession. The annual report gave a statement of what had occurred and it was resolved that the matter should be left in the hands of the board of directors to deal with, and the past action of the board in its dealings with the British Medical Association was confirmed. In discussing these resolutions the members were emphatic in their condemnation of the medical profession and in their determination to fight the matter out and to break up what they termed an "unholy conspiracy" which it was further stated was very close to an "infraction of the law." It was also suggested that medical men should be brought out from the United Kingdom to act as medical officers.

May 15th.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in June the following candidates passed in the subjects indicated:—

Surgery.—E. W. C. Bradfield (Section I.), St. Mary's Hospital; H. B. Drake (Section I.), St. George's Hospital; G. W. C. Hollist (Sections I. and II.), Guy's Hospital; G. J. Humphreys (Sections I. and II.), St. Bartholomew's Hospital; E. Osborne (Section II.), Birmingham; F. H. Rotherham (Sections I. and II.), London Hospital; E. M. Stacy (Sections I. and II.), Royal Free Hospital; C. J. Taylor (Sections I. and II.), Bristol; W. P. Taylor, Sheffield and Bristol; J. Vaillant (Sections I. and II.), Paris; and F. W. B. Young (Sections I. and II.), Leeds and Liverpool.

Medicine.—W. Ball (Section I.), Westminster Hospital; T. G. Longstaff (Section I.), Oxford and St. Thomas's Hospital; A. Mooney (Section I.), Royal Free Hospital; C. C. Morgan (Section I.), St. Bartholomew's Hospital; S. C. Pratt, Birmingham; and E. M. Stacy (Sections I. and II.), Royal Free Hospital.

Forensic Medicine.—W. Ball, Westminster Hospital; J. C. S. Dunn, St. Bartholomew's Hospital; T. G. Longstaff, Oxford and St. Thomas's Hospital; S. J Meredith, Birmingham and London Hospital; A. Mooney, Royal Free Hospital; E. C. Pratt, Birmingham; and E. M. Stacy, Royal Free Hospital.

Midwifery.—L. Courtauld, Cambridge and Middlesex Hospital; H. E. Darlington, Birmingham; H. B. Drake, St. George's Hospital; E. Gray, London Hospital; B. Hirsch, Berlin; T. G. Longstaff, Oxford and St. Thomas's Hospital; E. M. Stacy, Royal Free Hospital; H. S. Tumber, Sheffield; and P. L. Vawdrey, St. Bartholomew's Hospital.

The diploma of the society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—H. E. Darlington, E. Osborne, E. C. Pratt, F. H. Rotherham, E. M. Stacy, C. J. Taylor, and W. P. Taylor.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees, Easter term, the following candidates were successful:—

FIRST EXAMINATION.

Part I. Chemistry and Physics.—P. H. Bahr, Trinity; C. T. V. Benson, King's; H. S. Berry, Clare; T. R. H. Blake, Pembroke; D. W. A. Bull, B.A., Caius; L. S. T. Burrell, Trinity; H. J. B. Cane, Caius; J. R. C. Canney, Christ's; W. J. Carr, Trinity; S. P. Chan, Caius; F. Clayton, Trinity; H. N. Coleman, Christ's; H. F. S. Collier, Pembroke; R. M. Collinge, Caius; D. Cotterill, Christ's; A. J. W. Cunningham, Trinity; L. T. Dean, Sidney Sussex; H. Dearden, Caius; G. H. Dunn, Pembroke; W. H. F. Eales, Emmanuel; A. Fergusson, St. John's; C. L. Forde, Clare; J. C. Fox, Trinity; H. G. Frean, St. John's; D. J. Freyer, Trinity; T. S. Gibson, Emmanuel; H. D. Gillies, Caius; W. Harmens, H. A. Hott, and G. A. F. Heyworth, Trinity; C. J. R. Hoffmeister, Caius; F. H. Holl, Trinity; H. E. Humphrys, C. H. T. Ilott, B.A., and B. E. Ingleby, Caius; W. F. Jones, King's; H. N. Little, Caius; R. S. Lound, H. Selwyn; M. F. J. McDonnell, St. John's; C. Mackenzie, Emmanuel; A. G. M. Mainwaring, Trinity, D. C. Master, Caius; A. H. Moore, Trinity; A. Morgan, Corpus Christi; L. Nicholls, non-collegiate; B. K. Nutman, Jesus; W. G. Parkinson, Emmanuel; B. A. I. Peters, Jesus; F. S. Poole, Sidney Sussex; E. C. Priest, Caius; C. E. Redman, Pembroke; L. W. Sharp, G. L. Siddle, and O. R. Smale, Caius; F. H. Smith, Christ's; E. R. Stone, Emmanuel; C. H. S. Taylor, C. Tylor, and C. St A. Vivian, Caius; R. R. Walker, St. John's; R. W. S. Walker and H. K. Waller, Trinity; J. F. Windsor, H. Selwyn; T. N. Wood, Pembroke; S. Wood, Christ's.

Part II. Elementary Biology.—P. H. Bahr, Trinity; C. T. V. Benson and H. Bowring, King's; J. R. C. Canney, Christ's; R. S. Carey, Corpus Christi; W. J. Carr, Trinity; S. P. Chan, Caius; R. C. Chance, Trinity; H. Chapple, St. John's; L. Colledge, Caius; G. G. Colbett, Trinity; H. F. S. Collier, Pembroke; R. M. Collinge, Caius; H. M. McC. Coombs, Emmanuel; A. J. W. Cunningham, Trinity; L. T. Dean, Sidney Sussex; H. Dearden, Caius; M. Donaldson, Trinity; W. H. F. Eales, Emmanuel; F. S. Eschwege and A. W. Ewing, Christ's; A. Fergusson, St. John's; N. M. Fergusson, Magdalene; L. A. Fothergill, Emmanuel; H. G. Frean, St. John's; D. J. Freyer, Trinity; H. D. Gillies, Caius; C. B. Hawthorne, Clare; T. R. Hodgson, Christ's; G. Hoffmann, Caius; G. N. Humphreys, Catharine; B. E. Ingleby, Caius; G. James, St. John's; W. M. Jeffreys, B.A., Trinity; N. W. Jenkin, Christ's; W. F. Jones, King's; A. R. Jordon, Clare; J. L. Joyce, King's; H. F. Lester and R. L. Ley, Pembroke; H. N. Little, Caius; R. S. Lound, H. Selwyn; M. F. J. McDonnell, St. John's; C. Mackenzie, Emmanuel; R. G. Markham, Caius; L. Meakin, Trinity; L. Nicholls, non-collegiate; W. Oats, Caius; R. Parker, Christ's; W. G. Parkinson, Emmanuel; B. A. I. Peters, Jesus; F. S. Poole, Sidney Sussex; A. V. Poyser, Magdalene; R. C. Priest and K. D. Pringle, Caius; J. H. Roberts, B.A., Emmanuel; C. F. Searle, Pembroke; S. E. T. Shann, L. W. Sharp, G. L. Siddle, and A. L. H. Smith, Caius; F. H. Smith, Christ's; H. C. Snell, Caius; R. M. Soames, Trinity; F. A. Stockdale, Magdalene; E. R. Stone, Emmanuel; A. C. Talt, Sidney Sussex; C. H. S. Taylor and O. Teichmann, B.A., Caius; G. K. Thorpe, Clare; C. St A. Vivian, Caius; G. Walker, Trinity; V. T. P. Webster, Emmanuel; J. N. Wheeler and T. M. O. Williams, Christ's; W. H. Winter, Caius; and S. Wood, Christ's.

SECOND EXAMINATION.

Part II. Human Anatomy and Physiology.—E. D. Anderson, B.A., Pembroke; E. E. Atkin, Caius; A. S. B. Bankart, B.A., Trinity; S. Barradell-Smith, B.A., St. John's; E. Bell, B.A., Clare; H. A. Browning, B.A., St. John's; A. D. Brunwin, B.A., Trinity; A. S. Burgess, B.A., Caius; G. H. U. Corbett, B.A., King's; R. M. Courtauld, B.A., Pembroke; G. L. Cox, B.A., and H. F. Curl, B.A., Christ's; L. G. Davies, B.A., Trinity; H. S. Dickson, B.A., and A. H. Fardon, B.A., Christ's; G. S. Haynes, King's; T. W. S. Hills, B.A., Downing; G. Holroyd, B.A., Christ's; W. G. Howarth, B.A., King's; C. L. Isaac, B.A., St. John's; C. S. Lee, and A. S. Littlejohns, B.A., Caius; M. McPherson, B.A., and W. P. Morgan, M.A., Clare; W. H. Newton, B.A., Emmanuel; W. M. Orton, B.A., Trinity; H. B. Owen, and P. R. Parkinson, B.A., Caius; F. Shingleton Smith, B.A., King's; K. S. Singh, B.A., Pembroke; E. C. Sparrow, B.A., Trinity; C. M. Stevenson, B.A., St. John's; R. S. Taylor, B.A., Down; F. J. Thornton, Caius; F. C. Trapnell, B.A., and A. Wilkin, B.A., King's.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE.—At examinations held at the School of Physic, Trinity term, the following candidates were successful:—

Final Examination in Medicine.—John S. Joly, John A. Valentine, Robert P. Beatty, Horace Townshend, M.D., Ernest B. Booth, Walter R. H. Smith, Charles M. Benson, James E. Johnston, Richard F. Steel, Wallace Benson, Harry F. Johns, John S. Wilson, George R. Harman, William A. G. Cluffe, and George H. Keene.

M.B. Degree.—William H. Peile M.R.C.S. Eng., William Taylor F.R.C.S.I., and Herbert L. Thurnell, M.R.C.S. Eng.

AT the recent annual meeting of the American Laryngological Association in Boston, on May 27th, Dr. StClair Thomson was elected a Corresponding Fellow.

THE ROENTGEN SOCIETY.—The annual general meeting of this society will be held on July 3rd, 1902, at 20, Hanover-square, London, W., at 8.30 P.M.

THE Worshipful Company of Fishmongers has given a grant of £21 to the funds of the After Care Association for Poor Persons discharged Recovered from Asylums for the Insane. This is a piece of well-placed charity. We wish we could chronicle similar occurrences often.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Cremation Bill.

THIS Bill now awaits the Royal assent, having passed through all its stages in both Houses of Parliament. It enables burial authorities to establish crematoria and regulates their construction and management.

Midwives Bill.

The second reading debate on the Midwives Bill in the House of Lords brought out very clearly that several members, and notably the Lord Chancellor, entertain serious objection to the measure. It may therefore be taken that when the Committee stage is reached efforts will be made to amend the Bill. At present the Committee stage stands in the orders of the House for Friday, July 4th, though, of course, it is possible that it may not be taken on that day. Seeing that the first subsection of the first clause was substantially altered during the report stage in the House of Commons it will be of service to state its terms. They are: "From and after the first day of January, 1910, no woman shall habitually and for gain attend women in childbirth, or shall after the first day of January, 1905, be entitled to take or use the name or title of midwife (either alone or in combination with any other word or words) or any name, title, addition, or description implying that she is certified under this Act or is a person specially qualified to practise midwifery or is recognised by law as a midwife unless she be certified under this Act."

HOUSE OF COMMONS.

MONDAY, JUNE 23RD.

Kennedy Town Plague Hospital.

Mr. WEIR asked the Secretary of State for the Colonies whether he was aware that there was only one physician in charge of the Kennedy Town Plague Hospital, Hong-Kong; and, in view of the requirements of the patients, whether he would consider the expediency of calling for a report on the subject with a view to a larger and better trained staff being provided for this hospital.—Mr. CHAMBERLAIN replied: The staff of the Kennedy Town Hospital for infectious disease, which is, I am told, within easy reach of the civil hospital, includes a resident medical officer, two trained European wardmasters, and two trained sisters. According to the latest returns the total number of beds is 28, and the daily average of cases in hospital less than five. Under these circumstances I see no necessity to interfere with the arrangements made by the Colonial Government with the advice of the Principal Civil Medical Officer.

The Belfast Small-pox Hospital.

Mr. T. W. RUSSELL asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that it was proposed to erect a small-pox hospital for Belfast within the asylum grounds at Purdysburn, county Down; that there was an industrial and agricultural population in the immediate neighbourhood, and that objection had been taken to the erection of the hospital; and if he could state what the medical officers of the Irish Local Government Board had decided to be the striking distance of small-pox contagion, and if the asylum itself and the homes of the people were outside the distance.—Mr. WYNDHAM replied: The site of the temporary small-pox hospital is on lands acquired by the Belfast corporation for asylum purposes, but which were subsequently allocated to hospital purposes by the City of Belfast (Hospitals) Act of 1893. The site is 300 yards from the nearest dwelling-house. Some objections have been received by the corporation to the erection of the hospital. Neither the Local Government Board nor their inspectors have prescribed any fixed limit as the striking distance of small-pox contagion.—Mr. RUSSELL asked whether the right hon. gentleman was aware that the striking distance of small-pox contagion was clearly laid down by the Local Government Board in England and whether two national schools and a large number of cottages were within the striking distance as laid down by the Local Government Board in England.—Mr. WYNDHAM said: I am not competent to speak with regard to the English Local Government Board. As to the other question the only alternative would be to keep the patients in the workhouse hospital.—Mr. RUSSELL said that as considerable alarm existed in the neighbourhood perhaps the right hon. gentleman would inquire as to the rule and its working in England.—Mr. WYNDHAM undertook to make inquiry.

MIDWIVES BILL.

DEBATE IN THE HOUSE OF LORDS: FULL REPORT.

ON Friday, June 20th, the Midwives Bill was read a second time in the House of Lords.

The Duke of NORTHUMBERLAND, who had charge of the Bill, moved the second reading. He said that he would not make a long speech because he thought that there was a general consensus of opinion in favour of something being done to remove the evils of the existing state of things in this connexion. The Bill had been before their lordships upon a former occasion and then had a favourable reception at their hands. There were in this country between 10,000 and 15,000 women practising as midwives and they were said to attend annually 450,000 cases of labour to which no medical man was called. Yet there was absolutely no guarantee that these women were efficient for the work that they undertook. It was possible that any old drunken hag with no idea of cleanliness, no acquaintance with proper methods of conducting this work, might advertise herself as a midwife and carry on her practice without let or hindrance. If their lordships were to examine the reports of coroners' courts they would find a melancholy but very instructive lesson as to the necessity for a Bill of this kind. Of the 250 coroners in England and Wales more than 200 had signified their approval of some such measure. A curious fact had come out in connexion with the Bill—namely, the prevalence of puerperal fever in certain districts. This was a preventable disease and in the hospitals of London it was now practically unknown, yet in certain districts it was on the increase rather than the decrease. Not only were deaths caused by the present state of things, but a very large amount of suffering, sickness, and disease was inflicted upon mothers and children. In blind asylums it was calculated that 40 per cent. of the cases of blindness were due to want of care at birth. All these things justified an attempt at a remedy and he could not wonder that the question had been attacked over and over again in both Houses of Parliament. No doubt in matters of detail the question was fraught with many difficulties and in asking their lordships to pass the second reading he did not ask them to assent to every sentence in the Bill. He frankly admitted that it was a Bill which required very careful consideration in detail, and he trusted that their lordships would give it that consideration when it reached the committee stage. He asked their lordships now to assent broadly to the principle that in order to secure the proper degree of knowledge which was required by midwives, and also to secure that the character of midwives was good, some kind of certification ought to be carried out. They were face to face with a difficulty which had caused much heartburning in former years but which, he thought, was fairly met by this Bill and that was to secure the position of existing midwives, those who were really fit for their duties and whose character was beyond reproach, of whom, of course, there were a very large number. These midwives were safeguarded by the Bill and he trusted that they would suffer no inconvenience in their practice. When the Bill was introduced before great exception was taken to the fact that there was no sufficient local control. Now that had been amended by giving the county council a large power of supervision within its area. He had no reason to suppose that opposition to the Bill at this stage would be offered and therefore he would conclude by asking their lordships to pass the second reading.

Lord WELBY said that while he had no wish to impede the progress of the Bill he desired to draw attention to the fact that very considerable powers were given to an independent body described as the Central Midwives Board. This board would be entitled to draw upon the fees paid by candidates for certification for its expenses, but if any balance of expenses remained it would fall as a charge upon the rates. He was aware that the expenditure of the board was to be approved by the Privy Council, but he would call their lordships' attention to the fact that the approval came after the expenditure had been incurred and therefore that the control must be very imperfect. It was a very unusual thing to allow one body to spend money and then hand on the bill to another body without any check over the expenditure. He thought, therefore, that provision should be made for control of a substantial kind, and he recommended the subject to the consideration of the promoters of the Bill.

The LORD CHANCELLOR said that he had some more serious objections to the Bill. He did not undertake the responsibility of moving the rejection of the measure because there might be cases contemplated by the Bill which required regulation. He could not help thinking that the persons who prepared the Bill had in mind large centres of population possessed of ample means of obtaining medical assistance and had entirely omitted to consider the position of country districts where it was difficult to get even trained nurses. It was a sort of question with which it was all very well for people in London and other centres of population to deal so lightly. The circumstances of country districts were, however, quite different. He had received correspondence from magistrates in no less than five counties, Lancashire, Worcestershire, Warwickshire, Sussex, and Surrey, all telling the same story. He was told that if the Bill in its present form were passed into law it would inflict an inconceivable amount of hardship and suffering upon the poor in rural districts. A lady had also written to him and it appeared to him that she made out a very strong case against the Bill. This lady had herself passed an examination and got a certificate, not in order to make a living as a midwife, but merely for the purpose of assisting the poor, and with all her knowledge she protested against the Bill. She said that in 999 cases out of 1000 a technically untrained woman was quite able to give all the assistance necessary and that the woman called in always acted as nurse, washed the baby, and performed domestic services, and that to compel a poor man's wife to pay high fees for a trained midwife or a doctor was a foolish piece of legislation. There were certain passages in the letter which perhaps indicated a measure of jealousy of the medical profession, but there could be no doubt that the lady was thoroughly acquainted with the subject. One of the magistrates to whom he had referred wrote saying that in its present shape the Bill would inflict great hardship upon poor people in rural districts where wages were low and there were few institutions for providing trained and certified midwives. The habit of poor people, he said, was to employ a woman for 7*s.* 6*d.* or 8*s.* 6*d.* a week who not only attended the mother in her confinement but also looked after the house generally. They were respectable persons, he added, and did work which trained nurses would not do. Their lordships would notice that it was proposed to postpone the operation of the penal provision for eight years. That was merely a colourable amendment. The condition of things eight years hence in the country villages would not be different from what it was now. The supposition apparently was that the women would begin to train themselves between now and eight years hence. The amendment was merely a colourable one and, indeed, was no amendment at all. He could tell their lordships that persons well capable of forming a judgment looked upon the Bill in the present shape as a very serious reflection upon the working population, and why he had thought it right to say so much upon the matter was that as he was not going to move the rejection of the Bill he did not want the Bill to pass without their lordships' attention being called to the evils which might arise from its application in its present form so that when they got into committee they might look into the matter with very great care in order to see that no such injury was done to the poorer classes as these correspondents said would be done.

The Bishop of WINCHESTER said that it was appropriate that some remarks on this subject should come from the episcopal bench, because of the close connexion which had historically existed between the persons referred to in this Bill and the members of the episcopal bench. He did not know whether their lordships were aware of the fact that for many centuries no woman could practise the craft of midwifery without the direct sanction of the bishop of the diocese. That might sound like a relic of very far gone days, but he might say that within the lifetime of several of their lordships, bishops sent out inquiries to the clergy to learn whether or no the midwives engaged in practice were duly licensed. This, however, was a mere curious incident in the story of this matter, a story which was the more remarkable the more they looked into it for the wide swing of the pendulum from one point to another. At one time the subject of midwifery was very little regarded by the medical profession. He believed that he was right in saying that down to even the early part of last century it was treated by the College of Surgeons in a very much less respectful manner than other surgical matters. Now, however, the pendulum had swung in the opposite direction. There were some among those who opposed the Bill who went so far as to speak of the midwife as a person who practically ought not to exist at all, who was an absolute anachronism. The promoters of the Bill did not take either of those extreme views. They recognised, of course, the paramount necessity that in all ordinary circumstances there ought to be a ready appeal, at all events, to a trained medical man wherever it was possible, but whilst they recognised that they also recognised the natural and wholesome instinct which led so many mothers to prefer the aid of one of their own sex whom they had reason to believe to be fairly well qualified for the task. It was calculated that 60 per cent. of the births in England took place without the presence of a medical man. Whilst they recognised this desire, reasonable, natural, and wholesome, they wished to do something which should secure that the women who performed these functions had at least some degree of competence and were under some sort of supervision. In this respect England was not quite abreast of other countries. In France there had been legislation since 1805, in Belgium since 1818, in Austria since 1810, and so on, and we, almost alone among the nations of Europe, had trusted simply to the general judgment and commonsense without interfering except in cases of extreme wrong. The more the matter was looked into the more would be apparent the need for some training for the exercise of this craft. The evidence which came before the commission of which he was a member on infant life protection as to the mischief which took place from the

incompetence of those who were professedly giving such help as was needed, had impressed itself upon the mind of practically all the coroners of England and no small number of the medical profession. Although the doctors were not by any means agreed as to the way in which the wrong ought to be set right, he thought he was speaking accurately when he said that they were unanimous as to the existence of very great wrongs in things as they stood. It had been stated in evidence that from 25 to 30 per cent. of the cases that had to be treated in hospitals for women and children were due to mismanagement at the time of childbirth. That was no small matter and was surely sufficient to call for very determined intervention on the part of the Legislature. There was the particularly hard case of poor girl-mothers who in their time of dire trouble were compelled to seek aid. What had these girls—and their number was enormous—to do? In the columns of certain newspapers there were advertisements by the dozen offering homes for them. These homes were under the supervision of a midwife. These were not illegal or unnecessary. Something of the kind there must be, but surely no people needed supervision more than the people who kept these homes. They could not close these houses but they could take some precautions surely to prevent the worst forms of evil in them. He had followed with all the care he could the words that fell from the Lord Chancellor. He was not quite certain that he understood the grounds upon which the writers of the letters read by his lordship based their objection to the Bill. It almost seemed to him that they had overlooked the words in the clause as to women now engaged in the practice of midwifery. The clause dealt with women who habitually and for gain attended women in childbirth. It had nothing to do with the friendly neighbour who came in and gave her help and the benefit of her experience, but only dealt with the woman who made it her profession to do something which in some cases she was ill qualified to do. At present there was no means of checking this woman and he believed that no greater help could be given to the poorer classes than to pass some such Bill as this. The Lord Chancellor had said that the Bill must have been drawn by people who were unfamiliar with the rural districts and who only knew the cities and large centres of population. Now it happened that the Member in charge of the Bill in the other House (Mr. Heywood Johnstone) was the representative of an extremely rural district—namely, the Horsham Division of Sussex. The proposal now made to postpone the time when the penal provision came into operation did not seem to him quite to merit the criticism of his lordship. He understood that the object of the arrangement was to allow women for a time to go on practising. This was, first of all, for the sake of the public, because it was utterly impossible all at once to get a supply of qualified women, and in the second place they did not wish to press hardly upon the women now in practice. It was inevitable that there should be some little difficulty, but it seemed to him that it had been got over by this amendment in the way to cause least harm and least friction. He hoped that the Bill would not only be read a second time but would issue from the committee stage in a form not very much different from the present shape.

Earl RUSSELL said that the success of the measure would depend very much on the way that the Central Midwives Board carried out the duties entrusted to it. For himself he did not see why this legislation should cause midwives to raise their charges very much. He was glad to find that women were to be members of the board, because he was certain that their services would prove to be of the greatest value. He was of opinion that the Bill demanded general support, though it might be necessary to amend it in some particulars in committee.

Lord THRING criticised points of detail in the Bill.

Lord BALFOUR of BURLEIGH said that they were all matters which could be dealt with in committee. Seven years ago he had moved the second reading of a Bill on this subject, but when he entered the Ministry he had refrained from taking any further part in the movement for this legislation. It had, however, his cordial support and he was glad to find that there was now so good a prospect of the Bill being passed. There was no intention to interfere suddenly with those who were qualified to practise as midwives. The object of the Bill was to ensure that women who acted as midwives should have sufficient knowledge and training to know when to call in medical assistance. He was confident that the better a woman was trained the readier would she be to recognise danger and call in this assistance. He approved the Bill as an important and far reaching measure of social reform.

The Duke of NORTHUMBERLAND said that he strongly sympathised with all that had been said about the position of poor people in rural districts. Any Bill which put them in a worse position than they were now in in times of trouble would not be a Bill which their lordships would pass. But what did the Bill say? It said, first of all, that no woman should habitually and for gain attend women in childbirth unless properly certified. Then it went on to say in Clause 2 that any woman who within two years from the date of this Act coming into operation claimed to be certified should be certified if she held certain certificates or produced evidence that at the passing of the Act she had been for at least one year in *bonâ-fide* practice as a midwife and that she bore a good character. This provision, he thought, satisfactorily met the case.

The Bill was then read a second time.

ROYAL COMMISSION ON ARSENICAL POISONING.

Experiments with Rats.

THE Royal Commission on Arsenical Poisoning held a meeting for the examination of witnesses on June 13th in the Westminster Palace Hotel, Victoria-street. Lord KELVIN, chairman of the Commission, presided, and the other members present were Sir William S. Church, Sir William Hart Dyke, M.P., Professor Thorpe, and Dr. A. B. Whitelegge, with Dr. G. S. Buchanan of the Local Government Board, secretary.

Mr. OTTO HEHNER, representing the Society of Public Analysts, and Mr. ALFRED CHAPMAN, representing the Society of Chemical Industry, gave evidence as to the work of the committee appointed by those two bodies to find out the best processes for the detection of arsenic in beer and malt and the approximate estimation of minute quantities of that poison. The committee recommended the Marsh-Berzelius test and both gentlemen submitted reasons for its adoption. Given pure materials for the test they said that it was easy to use even by inexperienced people and that it gave accurate and reliable results with a minimum of trouble. They both preferred it to the Reinsch test.

Professor S. DELÉPINE of Owens College, Manchester, then presented to the Commission the results of his experimental investigation upon the action of arsenical beer and other arsenical solutions administered in large quantities to rats. The objects of the investigations were to ascertain—1. Whether the presence of arsenious acid in beer could account for the changes observed in persons who had consumed arsenical beer. 2. Whether it was necessary to assume that a compound more poisonous than arsenious acid was present in arsenical beer. 3. Whether the presence of organic compounds of arsenic such as cacodylates could account better for the effects of arsenical beer than the presence of arsenious acid. 4. Whether the quantities of arsenic found in beer by chemical analysis were sufficient to account for the effects produced by arsenical beer. 5. Whether the presence of alcohol in such amounts as are usually present in beer so favour the pathogenic action of arsenic as to render minute doses of that poison exceptionally noxious. 6. Whether concurrent influences, such as insufficient diet, could account for the different effects of arsenical beer upon different individuals. Rats were specially suitable for the experiments because they took beer and weak watery solutions of alcohol and arsenious acid very readily and could adapt themselves to considerable variations in their diet. They were less affected by arsenic than man and many other mammals. In man doses of arsenious acid varying between 0·1 gramme and two grammes had been known to produce death. A dose of two grammes to a man of moderate weight—i.e., weighing about 65,000 grammes—was equivalent to a dose of 0·003 gramme per 100 grammes body weight. Rouyer had found that arsenious acid or arsenites administered to dogs by the mouth was fatal in doses of 0·006 gramme per 100 grammes body weight (a dose of 0·015 gramme or arseniate of soda was necessary to produce the same result). Such a dose usually produced death in 24 or 48 hours. In rats he had found that a much larger dose was necessary to produce death in four and five days. A single dose of 0·012 per cent. of body weight produced the death of a rat weighing 135 grammes in four days. Two doses each of 0·006 gramme per cent. of body weight administered to another rat weighing 141 grammes produced death in five days from the giving of the first dose. From these results it would appear that the lethal dose of arsenious acid administered by the mouth might be for rats at least twice greater than the lethal dose for dogs and four times greater than the lethal dose for man. These figures were necessarily only approximate, especially with regard to man, but they were none the less useful in forming an opinion upon the value of the results obtained in experiments on rats. Thus, in trying to estimate the probable effects of certain quantities of arsenical beer upon man he had thought it desirable to administer to a certain number of rats solutions containing at least four times more arsenic than he had found in the most contaminated beers examined by him during the outbreak. He had, however, also used doses smaller than those actually taken by many beer-drinkers. Most of the beers he had examined contained less than two grains of arsenic per gallon. In one case he had found over one and half grains of arsenic per gallon. The largest quantity of arsenious acid he gave to rats for ordinary experimental purposes was seven grains per gallon, the fluid being given at the rate of one gallon a day for a man weighing 140 pounds. The quantity of beer taken by sufferers had frequently exceeded one and two gallons daily—i.e., from 7·14 per cent. to 14·28 per cent. of the weight of a man weighing 140 pounds. He had administered the arsenical beer or solutions in quantities equivalent to 8 per cent. or 16 per cent. of the body weight of the experimental animals, the slight excess being allowed as a compensation for accidental unnoticed losses. The experiments were conducted in sets. In each set a certain number of rats were placed under conditions absolutely identical. All the cages were of the same size and shape, placed side by side in the same part of the room, so as to be at the same temperature and receive the same amount of light. All the rats were fed at the same hour in the morning and were weighed just before being fed. The first set of experiments seemed to indicate that—(1) solutions of arsenious acid in water acted in the same way as arsenical beer; (2) that arsenical beer was less injurious than watery solutions of arsenic of the same strength; (3) that when an animal was well fed the presence of a small quantity of arsenic did not affect its health seriously for a time; (4) that doses of arsenic much greater than those found in arsenical beer capable of causing symptoms of chronic arsenical poisoning might be taken for about one month without causing death but that death was liable to occur suddenly at the end of such a period; (5) that after arsenical beer had been taken for a period of over three months the sudden stoppage of that fluid might be attended with disturbance of health causing serious loss of weight. The outcome of the second set of experiments seemed to be that arsenical beer, containing only a trace of arsenic, even in presence of an amount of alcohol above the average, was not very injurious to the health so long as a large amount of food was taken. The presence of a large amount of arsenic was clearly injurious whether alcohol was present or not, but the presence of a large amount of alcohol seemed in this case to precipitate the fatal issue. As in the first set of experiments, he observed that the replacement of the arsenical beer by pure water was not always attended with a beneficial result. The third set of experiments showed that beer containing arsenic derived from arsenical glucose, used as a malt substitute in brewing, was apparently as injurious as finished beer to which pure arsenious acid had been added. Cacodylate of sodium had apparently no bad effect and seemed even to be beneficial. Beer free from arsenic and containing a small amount of alcohol was distinctly beneficial and apparently acted as a food. The chief outcome of the fourth set of experiments was that alcohol when given in small doses together with arsenic did not seem to intensify the bad effects of the latter; there was, on the contrary, an indication that alcohol retarded the action of arsenic. During the preliminary stages of the experiment Rat 14 increased in weight more rapidly than Rat 15 and yet at the end of the experiment Rat 14 had lost weight to a greater extent than Rat 15 which was taking arsenic along with alcohol. The fifth set of experiments had for object to determine the lethal dose of arsenious acid. He had already indicated the results. The sixth set of experiments confirmed his impression that bitter beer drunk at the time of the outbreak in Salford and in Manchester was less wholesome than lager beer imported from Munich. Whether this difference was attributable to the small trace of arsenic present in the beer or the

difference between the products of high and low fermentation he was not prepared yet to say, but his general impression was that beer brewed at a low temperature was more wholesome than beer brewed at a high temperature. It was also to be noticed that the bitter beer used in this set of experiments was beer which would have passed easily the test recommended by the brewers' commission. In the seventh set of experiments the animals showed frequent evidences of intoxication, so that the administration of a fluid containing 20 or 25 per cent. of absolute alcohol produced effects which were not observed in rats to which an equal amount of alcohol was given in a more diluted state. The effects of alcohol were also more variable than those of arsenic. Two of the rats appeared to recover gradually from the first effects of alcohol and to regain weight; two other rats continued to lose weight from the first. Only one of the four died, and that animal seemed from the first to be very sensitive to the action of alcohol; possibly it was not in a good state of health at the beginning of the experiment. After the death of most of the rats used in the experiments a post-mortem examination was made and the chemical estimations revealed clearly the fact that the amount of arsenic present in the body after death bore some relation to the amount of arsenic taken during life. The evidence, so far as it went, seemed to indicate that arsenic might accumulate in the tissues up to a certain point. That the tissues were not capable of retaining more than a certain amount of arsenic seemed also to be indicated by the fact that whenever large doses of arsenic were administered, even up to the time of death, the amount of arsenic found in the body after death was invariably smaller than the amount of arsenic given daily. These results seemed to indicate that arsenic formed some kind of compound with tissue elements. Another interesting fact was brought out by these estimations. Arsenic was found in the tissues of two rats which had ceased to take arsenic for more than 40 days before death. In Experiment 1 the amount found was nearly equal to a daily dose. In Experiment 6 the amount of arsenic found was 16 times greater than a single daily dose. The daily dose in this case was exceedingly small. To account for these results it was almost necessary to suppose that arsenic entered into combination with some of the constituents of protoplasm. When large doses were given it was probable that a portion of the arsenic passed out of the body with the faeces and that a portion of what passed into general circulation, not being retained by the tissues, was excreted by the skin, liver, kidneys, and other glands. This view was supported by actual observation in the human subject. He made several attempts to collect the urine and faeces of rats taking arsenical fluids but he was not successful in devising a plan excluding the possibility of contamination of the excreta with the fluid administered to the animals. Generally speaking, the results of the estimation of arsenic in the experimental rats confirmed the view that arsenical beer, such as was drunk during the outbreak, acted in the same way as solutions of arsenious acid containing about the same quantity of arsenic as those which he had estimated to be present in that beer. Watery solutions of arsenious acid appeared, however, to be more toxic than beer containing the same amount of arsenic. Professor Delépine then dealt with lesions found after death in rats which had taken arsenic and compared them with lesions observed in persons who had died from the effects of arsenical beer. On the basis of his preliminary examinations he might say that the following changes were of common occurrence among the victims of arsenical beer—viz., (1) general hyperæmia, most noticeable in the lungs, glands, muscles, and nerve centres; (2) considerable degeneration and wasting of some of the muscles examined. (3) albuminous and fatty degeneration of the cardiac muscle; (4) more or less complete disappearance of fat from the cells of fatty tissues; (5) albuminous and fatty degenerations of glandular epithelium, specially well marked in the liver; (6) degeneration of nerve tissues, most marked in the nerve-cells of the cerebral cortex and the spinal cord. The terminal nerves seemed also to be affected in a few cases but he was not certain whether the changes were attributable to arsenic or to some other causes. Sometimes there was over-production of cutaneous epithelium and of fibrous tissues in some of the organs which were also the seat of degenerative processes. With regard to the latter change it was generally difficult to exclude the possible influence of other causes. The post-mortem examinations which he had made of the rats used in the experiments which had been previously related had yielded very similar results. In fact, with one exception, the changes observed in the various organs and tissues had been identical with those found in the human subject; but with regard to pigmentation he had obtained no result. He expected this difference, for all his experimental rats were albino rats; the absence of pigmentation in these cases was an additional confirmation of the theory which he had formulated many years ago regarding the origin of melanin. At the time when he started his experiments he tried to obtain some tame grey rats, but he was not able to get any. It would have been impossible to conduct carefully systematic experiments with wild rats. A detailed account of these pathological investigations was not yet ready and would not in its present state add materially to the value of the evidence which he had already obtained. There remained in his mind no doubts regarding the similarity between the lesions observed in the bodies of patients who had died from the effects of arsenical beer and the lesions observed in the carcasses of rats to which solutions of arsenious acid in water or in beer had been given over periods varying from 30 days to 90 days. Several of these cases had not taken proportionately more arsenious acid than the human victim. The mode of death in both cases was usually sudden, as if due to cardiac failure or failure of the respiratory muscles. It was also noticeable that when small quantities of arsenic were given a fatal result did not usually occur before the end of three months and that recovery was possible at the end of that time. The experiments on rats had also the object of determining whether arsenious acid in beer was more poisonous than arsenious acid dissolved in water. The changes of weight observed in animals taking equal amounts of arsenious acid dissolved in beer or in water had already shown that arsenious acid dissolved in water seemed to be more injurious than arsenious acid dissolved in beer; the post-mortem examination confirmed this view, for the degenerative changes were most marked in rats taking watery solutions of arsenious acid. Alcohol up to the amount usually present in beer did not seem to affect the rats unfavourably, but the addition of alcohol up to 10 per cent. of the total fluid seemed to have a detrimental effect. The bad effects obtained with strong solutions of alcohol even in moderate quantities indicated that dilution had an important influence upon the results. With regard to the possible presence of arsines in arsenical beer cacodylates seemed to him to be among the most noxious arsines which could reasonably be expected to be present in beer; the results obtained in the only case in which cacodylate of sodium was administered were so much in accordance with what was known before of the physiological action of this salt that he did not think it necessary to multiply experiments. Far from having a detrimental effect during periods comparable to those of the Salford epidemic, cacodylate of sodium seemed to have a beneficial effect even when administered in large doses; the animal treated with cacodylate of sodium bore better the effects of low diet than a control animal taking no arsenic at all. Another rat receiving as much arsenic, in the form of arsenious acid, as the cacodylate rat became, on the contrary, seriously ill under the same collateral experimental conditions. The post-mortem state of organs agreed with the symptoms during life. In the rat receiving arsenious acid, and which died in consequence, the usual degenerative changes were observed and the fat of the fatty tissues had disappeared entirely from the parts where it was usually found. The cacodylate rat, on the contrary, was apparently quite well when killed, its organs had a normal appearance, and there was the usual amount of fat under the skin and in other situations.

On the whole case Professor Delépine presented the following conclusions—viz.: 1. The 1900-1901 outbreak was due to the presence of arsenious acid in the beer drunk by the victims. 2. The presence of an amount of arsenious acid capable of producing such an outbreak could only be accounted for by the use of arsenical glucose or invert sugar as malt substitutes. 3. The presence of smaller quantities of arsenious acid such as might be due to the use of badly prepared malt, though seldom dangerous to the same extent, was capable of producing injurious effects in ill-fed or weak individuals. 4. Bad feeding and other deteriorating influences were sufficient to account for the special incidence of cases of poisoning among classes of people liable to these influences.

The Commission then adjourned.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Les Dilatations de l'Estomac. Par Maurice Soupault, Médecin des Hôpitaux de Paris. ("Les Actualités Médicales" Series.) Price 1 fr. 50.

BAILLIÈRE, TINDALL AND COX, 8, Henrietta-street, Covent Garden, W.C.

Clinical Lectures on Hydatid Disease of the Lungs. By Alfred Austin Lendon, M.D. Lond., of Adelaide. Price 5s. net.

A Manual of Practical Medical Electricity, the Röntgen Rays, and Finsen Light. By Dawson Turner, B.A., M.D., F.R.C.P. Edin., M.R.C.P. Lond., Fellow of the Physical Society; Lecturer on Experimental Physics, Surgeons' Hall, Edinburgh. Third edition, revised and enlarged. Price 7s. 6d. net.

Notes on Medicine for Medical and Dental Students. By W. D. Woodburn, L.D.S., &c., Dental Surgeon to the Western Infirmary, Glasgow. Price 3s. 6d. net.

BUTTERWORTH AND CO., 12, Bell Yard, Temple Bar, W.C.

The Public Health Acts, annotated, with Appendices. Containing the various Incorporated Statutes and Orders of the Local Government Board, &c. First Edition, Public Health Act, 1875, by W. G. Lumley, Esq., LL.M., Q.C., and Edmund Lumley, B.A. Sixth edition, in two Volumes, by Alexander Macmorran, M.A., one of His Majesty's Counsel, and S. G. Lushington, M.A., B.C.L., of the Inner Temple, Barrister-at-Law. Price £5 12s. 6d.

CHILDHOOD SOCIETY, Parkes Museum, Margaret-street, W.

Transactions, Vol. I., being the Proceedings of the Childhood Society for the year 1901. Price 2s. 6d.

CHURCHILL, J. & A., 7, Great Marlborough-street, W.

Clinical Lectures on Surgical Subjects delivered in University College Hospital by Christopher Heath, Past President of the Royal College of Surgeons of England, Emeritus Professor of Clinical Surgery in University College, London, and Consulting Surgeon to University College Hospital. Second series. Price 6s.

The Diseases of Children. By James Frederic Goodhart, M.D., LL.D. Aberd., F.R.C.P., Consulting Physician to the Evelina Hospital for Sick Children; Consulting Physician to Guy's Hospital. Seventh edition. With the assistance of George Frederic Still, M.A., M.D., F.R.C.P., Assistant Physician for Diseases of Children, King's College Hospital. Price 12s. 6d. net.

Caries of the Spine: being an Advance Chapter of "The Spine, its Deformities, Debilities, and Deficiencies." (Third edition now in the press.) By Heather Bigg, F.R.C.S. Edin. Price 2s. 6d.

Clinical Essays and Lectures. By Howard Marsh, F.R.C.S., Surgeon to and late Lecturer on Surgery at St. Bartholomew's Hospital. Price 7s. 6d.

FISCHER, GUSTAV, Jena.

Lehrbuch der Haut-und Geschlechtskrankheiten. Von Professor Dr. J. H. Rille, Vorstand der Dermatologischen Klinik an der k.k. Universität zu Innsbeuck. Erste Abteilung. Price M. 4.50.

GLAISHER, HENRY J., 57, Wigmore-street, Cavendish-square, W.

Eczema and its Congeners: their Pathology and Bacteriology, with some Recent Improvements in their Treatment. By Edward Blake, M.D. Price 5s. 6d. net.

GRIFFIN, CHARLES AND CO., LTD., Exeter-street, Strand, W.C.

Diseases of the Organs of Respiration: A Treatise on the Etiology, Pathology, Symptoms, Diagnosis, Prognosis, and Treatment of Diseases of the Lungs and Air-passages. By Samuel West, M.A., M.D., F.R.C.P., Assistant Physician and Lecturer on the Principles and Practice of Medicine at St. Bartholomew's Hospital. In two volumes. Price 36s. net.

HILDRETH, E. L. AND CO., Brattleboro.

Transactions of the Vermont State Medical Society, at the Eighty-eighth Annual Meeting held at Montpelier, Vermont, Oct. 10th and 11th, 1901. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin.

Der Hitzschlag auf Märschen. Von Dr. A. Hiller, Oberstabsarzt, z. D. und Privatdocent. Price M.7. (Bibliothek v. Coler, Herausgegeben von O. Schjerning, Band 14).

J. B. LIPPINCOTT COMPANY, Philadelphia and London.

A Practical Treatise on Small-pox. Illustrated by coloured photographs from life. By George Henry Fox, A.M., M.D., Consulting Dermatologist to the Health Department of New York City, with the collaboration of S. D. Hubbard, M.D., S. Pollitzer, M.D., and J. H. Huddleston, M.D. Complete in two parts, 12s. net.

KARGER, S., Karlstrasse, 15, Berlin.

Einführung in die Farbstoffchemie. Für Histologen. Von Dr. L. Michaelis, Assistenzarzt am Städtischen Krankenhause Gitschinerstrasse in Berlin. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADDINSELL, J. H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Accoucheur to King's College Hospital.

BELL, THOMAS, M.D. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Shepshed District of Leicestershire.

CLAPPERTON, T. J., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Mr. Rose at King's College Hospital.

CROCKER, J. M., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Bingley District of Yorks.

DALY, RAMSAY, M.D., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

FARRINGTON, JOHN, M.R.C.S., L.R.C.P., has been appointed Provincial Medical Officer, Fiji.

GARDUTT, R. H. O., L.R.C.P. & S. Ed., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Wolsingham District of county Durham.

HENEGHAN, P. J., L.R.C.S.I. & L.M., has been appointed Certifying Surgeon under the Factory Act for the Foxford District of County Mayo.

HIGHET, H. CAMPBELL, M.D Glasg., D.P.H. Lond., has been appointed Physician to His Britannic Majesty's Legation, Bangkok, Siam, vice P. A. Nightingale, M.D. Edin, resigned.

HORNE, MAYNARD M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Assistant Anæsthetist to the Hospital for Women, Soho-square, W.

LEE, ROWLAND, M.B., B Ch., B.A.O. R.U.I., has been appointed Assistant Medical Officer at the Cardiff Workhouse.

LEWIS, S. T., has been appointed Certifying Surgeon under the Factory Act for the Youlgreave District of Derbyshire.

MACKENZIE, W. S., L.R.C.P. Edin., L.R.C.S. Edin., has been re-appointed Medical Officer of Health to the Normanton Urban District Council.

MACLEOD, J. A., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to Mr. Barrow at King's College Hospital.

MACWATTERS, M. R., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to Mr. Cheyne at King's College Hospital.

MANGLE, E. C., L.S., B.A., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MAXWELL, W. W., M.B., Ch.B. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Physician to King's College Hospital.

MCGAVIN, LAWRIE HUGH, F.R.C.S., has been appointed Surgeon to In-patients at the Seamen's Hospital, with duties at the Branch Hospital in the Royal Albert Dock (to which is attached the London School of Tropical Medicine).

MERCIER, C. JEROME, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Medical Officer to St. Mary's Hospital for Sick Children, Plaistow, E., vice Arthur E. Whitehead.

MORGAN, W. E., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health to the Union of Camberwell.

MURISON, PATRICK, M.B. Edin., has been appointed Medical Officer of Durban, Natal.

NOLANS, FRANCIS, F.R.C.S.I., has been appointed Surgeon Medical Officer to the Irish Coastguards of North Wexford.

PRITCHARD, S. C., M.B., Ch.B. Edin., has been appointed Junior House Physician to King's College Hospital.

REID, R. W., M.B., Ch.B. Aberd., has been appointed Assistant House Accoucheur to King's College Hospital.

SHEARER, WILLIAM, M.B., Ch.M. Glasg., has been appointed Medical Officer and Vaccinator for the Western District of the Parish of St. Andrew's.

SKRIMSHIRE, HENRY F., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Resident Medical Officer to St. Mary's Hospital for Sick Children, Plaistow, E., vice S. E. Johnston.

STEELE, KENNETH, M.R.C.S., L.R.C.P., has been appointed Anæsthetist to the Seamen's Hospital Society, with duties at the *Dreadnought* Hospital at Greenwich.

THOMSON, W. ERNEST, M.A., M.D., L.F.P.S. Glasg., has been appointed Ophthalmic Physician to the Glasgow Maternity Hospital.

WILKINSON, J., M.D. Edin., has been appointed Medical Officer of Health to the Droitwich Rural District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

APPLECROSS DISTRICT OF THE PARISH OF APPLECROSS, Ross-shire.—Medical Officer and Vaccinator.—Salary £96, with house.

ARMY MEDICAL SERVICE, War Office, S.W.—Thirty Commissions.

BATH ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BIRMINGHAM PARISH.—District Medical Officer. Salary £350, rising to £400 per annum.

BLACKBURN COUNTY BOROUGH.—Assistant Medical Officer of Health, unmarried. Honorarium of £50 per annum, with board and lodging.

DEVONPORT ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £110 per annum, with board and lodgings.

GLAMORGAN COUNTY ASYLUM, Bridgend.—Fifth Assistant Medical Officer, unmarried. Salary £170, with board, lodging, and washing.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing. Also Junior Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HOSPITAL FOR WOMEN, Soho-square.—Registrar. Honorarium twenty-five guineas.

HULL ROYAL INFIRMARY.—Casualty House Surgeon for not less than six months. Salary £80, with board and lodging.

LEITH HOSPITAL.—Two Assistant Physicians.

LANARK COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £140 per annum, with travelling expenses.

LIVERPOOL, CITY OF, INFECTIOUS DISEASES HOSPITALS.—Two Assistant Resident Medical Officers, unmarried. Salary £120 per annum each, with board, washing, and lodging.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £25, with board and lodging.

LONDON COUNTY ASYLUM, Colney Hatch, N.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—Second Assistant House Physician. Salary £50 per annum, with board and residence, or £100 a year and board.

NEWCASTLE-UPON-TYNE, CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary £100 per annum, rising to £150, with board, lodging, &c.

NORFOLK AND NORWICH HOSPITAL.—Second Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROYAL DENTAL HOSPITAL OF LONDON.—Curatorship to the Mechanical Department. Salary £200 per annum.

SALOP INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board and apartments.

SEAMEN'S HOSPITAL SOCIETY.—Surgeon at the Branch Hospital in the Royal Victoria and Albert Docks, E.

SOMERSET AND BATH ASYLUM, Cotford, Taunton.—Assistant Medical Officer, unmarried. Salary £160 per annum, rising to £200, with apartments, board, &c.

SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with rooms, board, and washing.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

THROAT HOSPITAL, Golden-square.—Senior Clinical Assistant.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, and washing.

WEST KENT GENERAL HOSPITAL, Maidstone.—House Surgeon, unmarried. Salary £120, with board and residence.

WOLVERHAMPTON GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

MARRIAGES.

SIBBALD—PHELAN.—On June 3rd, at St. Mary's Church, Clonmel, Ian Graham Sibbald, M.B., C.M. Edin., younger son of Sir John Sibbald, M.D. Edin., to Rose Sarah Marguerite, elder daughter of Thomas Phelan, Esq., Spring Garden, Clonmel.

WYNNE—HAMOND.—On June 17th, at Wells, Norfolk, by the Venble. Archdeacon Pelham, Wilfred Phillips Wynne, F.R.C.S. Irel., to Georgena Maria, daughter of the late Captain Philip Hamond.

DEATHS

MACNIVEN.—On June 21st, on board steamship *Plassy*, at Southampton, Civil Surgeon William Macniven, M.B., B.S. Edin.

MACAULAY.—On June 18th, at Wynnstay-gardens, Kensington, James Macaulay, M.A., M.D., son of the late Dr. Alexander Macaulay of Edinburgh, aged 85.

WASHBOURN.—On June 20th, at Tunbridge Wells, John Wichenford Washbourn, C.M.G., M.D., F.R.C.P., F.R.C.S., aged 38.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A STORM IN A TEACUP.

A CONSIDERABLE correspondence between the Local Government Board of Ireland and Dr. R. H. D'Olier Duckworth, dispensary medical officer to the board of guardians of the Abbeyleix Union, has been forwarded to us by the latter gentleman. The letters relate to the vexed question of leave. Dr. Duckworth maintains that he has duly applied for two weeks' leave and that the board of guardians grants it on condition that he pays his substitute. The Dispensary Rules in Article 28 lay it down that "each medical officer shall be allowed an annual vacation not exceeding four weeks and the guardians shall pay to the medical practitioner employed temporarily to discharge the duties of the medical officer for that period such reasonable remuneration for his services as the Local Government Board shall approve and direct." It has been decided in a court of law that although it is not incumbent upon the guardians to grant the whole four weeks' vacation it has not been decided that the medical officers were not entitled to receive a reasonable holiday and to have their substitutes remunerated from the rates. Obviously this is the only just arrangement, and even if the entire four weeks are granted, as is usually the case, it cannot be maintained that the medical officer is unduly straining the distribution of the ratepayers' money. Four weeks out of a year is not an exaggerated allowance of leave, and if the medical officers were to have the benefit of it only by paying a locum tenent at their own expense they would have such a grievance as no Irishman would be likely to leave unvoiced and such as no board, whether English or Irish, could justly refuse to rectify. The Abbeyleix board of guardians, however, makes no objection either to the principle of granting a four weeks' vacation with pay for a substitute or to the general practice of this principle. Dr. Duckworth particularly points out that the other medical officers have received the benefit which he claims. The crux of the matter seems to be a lapse of formality in Dr. Duckworth's application for leave, no notice of which appears on the minutes of the board of guardians at a particular meeting, and the fact that the board was displeased with some previous action on its medical officer's part. For the board of guardians to take revenge upon some past procedures on its officer's part by making difficulties about his leave at a later date seems to us hardly a creditable manner of showing resentment. On the other hand we strongly advise Dr. Duckworth to realise, as the Local Government Board of Ireland, indeed, also practically advises him, that in dealing with a board of guardians the letter of the law and the strictest formality in such matters as application for leave cannot be too rigorously observed.

POST-MORTEM DELIVERY.

To the Editors of THE LANCET.

SIRS,—Under the heading "Post-mortem Delivery," p. 264, in Glaister's "Medical Jurisprudence," &c., 1902, I notice the following sentence: "It therefore becomes a serious question for a medical practitioner to consider whether, when a mother dies near the full term of her pregnancy, he should give the child a chance of living by this (Cæsarean) method or let it die with the mother." The word Cæsarean is inserted by me. The suggestion that such a position admits of doubt as to our action is surely astounding.

I am, Sirs, yours faithfully,

Ballincollig, June 21st, 1902. JAMES J. HARDING, F.R.C.S. Irel.

THE ASSOCIATION OF GERMAN PRACTITIONERS AND NATURALISTS.

To the Editors of THE LANCET.

SIRS,—Could any of your readers tell me the name and address of the Secretary of the above? I have searched files of THE LANCET in vain.

I am, Sirs, yours faithfully,

June 22nd, 1902. W. S.

DIFFICULTIES UNDER THE NOTIFICATION ACT.

To the Editors of THE LANCET.

SIRS,—I had a small-pox patient at a public-house who did not wish to go away to an isolation hospital but wished to remain at home. I told her that so long as she was completely isolated the public authorities could not insist on her removal to the isolation hospital. The medical officer of health and sanitary inspector called and threatened to get an order to close the public-house if she declined to go away. My point is, could the sanitary authorities have got any such order, as the case was completely isolated? Under the threat the patient consented to be removed. As regards dual notifications, I have seen several cases of small-pox in consultation and I have notified them as well as the other medical man who was attending them. Can I legally claim for my notification? I enclose the copy of a letter I have received from the clerk to my rural district council and should like to have your opinion as to whether that letter is a libel upon myself. Under the Medical Act, "Infectious Diseases (Notification) Act of 1889, I am bound under a penalty to notify forthwith any of the infectious diseases mentioned. I did so by the first post but *I am under no obligation to take steps to get a patient suffering from infectious disease removed to the isolation hospital.* I usually ask the medical officer of health on my certificate of notification to take the necessary steps to get a patient removed. I have done so in my former cases of small-pox notified in this district. I had never received before any admission orders to the infectious hospitals which the clerk sent me. I am of opinion that the clerk insinuates in his letter that I was lacking in my duty as a medical man, which is not the case, as far as I know.

I am, Sirs, yours faithfully,

Rainham, Kent, June 14th, 1902. SYDNEY G. TIPPETT.

[COPY.]

Milton Rural District Council,
Sittingbourne, 13 June, 1902.

DEAR SIR,—My attention has been called to the case of a woman at Rainham under your care suffering from small-pox. No steps appear to have been taken by you to have the case removed to the hospital beyond notifying the medical officer of health. The notification, which was sent by post, was only received last evening and in consequence the case was not removed to the hospital until after many unnecessary hours of delay had occurred and after neighbours had visited the patient.

To avoid any such repetition in future I beg to remind you that as medical attendant you are empowered to sign the admission orders to the hospital in all cases of infectious disease and by wiring the authorities there the cases can be removed without delay.

Please see that this is done in all future cases without fail as the outbreak at Rainham is assuming very serious proportions. In case you have not a supply of admission forms to the hospital I have obtained and send you some herewith.

Yours faithfully,

E. CECIL HARRIS,
Clerk to the Rural District Council.

*** The circumstances in which dual fees can be claimed have been fully set out by us in a pamphlet entitled "Difficulties under the Infectious Diseases (Notification) Act." Our correspondent would seem to be entitled to a fee for notification. The medical officer of health must, in our opinion, be the deciding authority as to what constitutes effective isolation; otherwise useless trouble will ensue in the working of the Act. We cannot advise whether the clerk to the rural district council has been libellous, for that is a purely legal affair, but his letter should be sent to the Local Government Board, attention being drawn to his interpretation of the Infectious Diseases (Notification) Act.—ED. L.

THE CONSULTING REFRACTIONIST.

IN an article in the current number of the *Horological Journal* the whole art of "the refractionist" is expounded for the benefit of the watch and clock makers and others who nowadays, armed with diplomas of spectaclemakers' or optical societies take upon themselves the diagnosis of disease. "To be successful refractionists we must have a method. ..... We darken the room and proceed to examine by the indirect method. This must be done very carefully and methodically and the Fundus searched thoroughly for any trace of disease. We first of all see that the Media are clear; then we notice the colour of the Optic Disc, then its shape and also its cupping, if any; we must next examine its margin and then the veins and arteries, after which the Macula region must be searched, and then getting the patient to look up and down and to the right and left we examine the peripherics. Having finished with the indirect method we put the light at the side of the head and use focal illumination. ..... If our examination has revealed any disease the patient must be advised to consult an ophthalmic surgeon at once; if, on the other hand, we are satisfied that no pathological conditions exist we proceed with Retinoscopy," which is described as being done without any mydriatic being mentioned. The example quoted is determined as having refraction:—

$$\frac{+0.5}{-0.5}$$

Muscle-testing and the prescription of a prism is lightly touched on and then "we put down the dimensions together with price and quality on our paper and the consultation is at an end."

AN INFLAMED BURSA AND A PUZZLED COMMITTEE.

ONE of the dangers of a "little learning," particularly when that knowledge is cloaked with a familiar and apparently comprehensive title, is amusingly illustrated by a recent discussion at the management committee of the Cardiff Infirmary. The trouble arose in connexion with a case of acute bursitis of the prepatellar bursa, and at least one of the cardinal symptoms of inflammation—heat—seems to have passed from the origin of, to the participators in, the discussion. An eye-witness might perhaps have detected some facial "rubor" also. The facts are simple enough and the trouble arising from them is entirely traceable to the circumstance that to the layman a "housemaid's knee" is a quiet, trivial affection and cannot constitute an urgent case. In this particular instance, an example of a contingency familiar enough to our readers, the "housemaid's knee" was acutely inflamed; the temperature was 103·6° F., and the patient was severely affected. The medical board, rightly and naturally enough, decided that the case was one for immediate admission. Presumably suppuration and an incision were in the thoughts of its members. The managing committee

was at a loss to understand how a housemaid's knee could be thus seriously regarded and hence the discussion to which we refer. Matters would have been much simplified, it appears, if the resident medical officer had briefly explained to the committee that a familiarity with the term "housemaid's knee" did not put a man in possession of all the facts concerning nurse and their affections.

ERRATUM.—In THE LANCET of June 14th there appeared under "K," in Communications, Letters, &c. Received, the name of Dr. Károly, Budapest. This should have been "Dr. Károly Doctor, Budapest," Károly being the Christian name.

During the week marked copies of the following newspapers have been received:—*Brighton Gazette, Kent Examiner, Daily Chronicle, Surrey Advertiser, Bristol Mercury, Dublin Express, Star, Times of India, Bradford Observer, Daily Graphic, Huddersfield Examiner, Sanitary Record, Local Government Chronicle, Hertfordshire Mercury, Burton Chronicle, Dundee Advertiser, Lincolnshire Advertiser, Bolton Chronicle, Kent Messenger, Middlesbrough Gazette, Birmingham Post, Aberdeen Press, Torquay Times, Western Daily Mercury, Yorkshire Post, Sheffield Independent, Wiltshire Mirror, Morning Post, Newcastle Journal, Hereford Mercury, &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 24th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 18	30·11	N.	...	102	66	51	52	54	Cloudy
,, 19	29·85	S.E.	...	121	73	51	58	63	Fine
,, 20	29·53	S.	0·09	76	64	60	58	60	Raining
,, 21	29·83	S.W.	...	122	72	55	56	59	Cloudy
,, 22	30·10	S.W.	...	122	74	56	63	69	Fine
,, 23	30·26	S.W.	...	115	78	62	58	62	Fine
,, 24	30·22	S.	...	94	76	60	63	67	Hazy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (2nd).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Mr. Doran and others. Short Communication on a Case of Puerperal Eclampsia, with Autopsy and Remarks by Dr. R. H. Bell. Papers:—Mr. J. W. Taylor: (1) Complete Inversion of Uterus requiring Operation; (2) Ovarian Tumour obstructing Delivery, Vaginal Ovariotomy.

THURSDAY (3rd).—NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital).—4 P.M. Annual General Meeting. Election of Officers.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

THURSDAY (3rd).—CHARING CROSS HOSPITAL.—4 P.M. Dr. W. Hunter: Pathological Demonstration. (Post-Graduate Course.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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